AUTOMOTIVE

AEROSPACE

HEAVY EQUIPMENT

OIL & GAS

GENERAL ENGINEERING

KENNAMETAL®

ENGINEERING YOUR COMPETITIVE EDGE

LATHE

LATHE TOOLING

Catalog 4010

Engineering Your Competitive Edge®

KENNA PERFECT™ Tooling Selection-and-Application System:

Grades perfectly engineered to optimize your turning operations — no matter what your workpiece material!

CARBIDE & CERMET

CERAMIC

PCD & CBN

01 ↕ 50

STEEL	STAINLESS STEEL	CAST IRON	NON-FERROUS	HIGH-TEMP ALLOY	HARDENED MATERIAL
KT315	KT315	NEW KY1310	NEW KD1405	KY2100	KY4400
NEW KC9110	NEW KC5010	KY3400	KD100	NEW KY1540	KY1615
KC9125	KC9225	KY3500	KC5410	NEW KY1525	NEW KB9610
KC9040	NEW KC5025	NEW KB9640		K313	KB5625
	NEW KC9240	KT315		NEW KC5510	NEW KB9640
	KC9245	NEW KC9315		NEW KC5525	
		KC9325		KC9245	

NEW

KENNA UNIVERSAL™: The world's only available universal product offering — tailored to the unique needs of the job-shop industry!

Available for turning, boring, grooving, threading, groove and turn, and cut-off operations in three highly versatile grades — **KU10T, KU25T,** and **KU30T!**

CARBIDE

01 ↕ 50

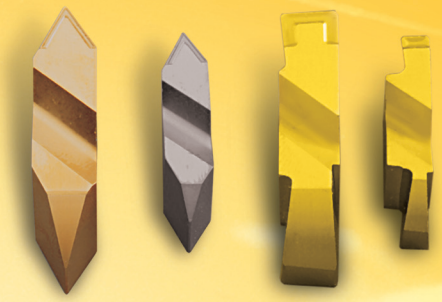
STEEL	STAINLESS STEEL	CAST IRON	NON-FERROUS	HIGH-TEMP ALLOY	HARDENED MATERIAL
KU10T	KU10T	KU10T	KU10T	KU10T	KU10T
KU25T	KU25T	KU25T	KU25T	KU25T	KU25T
KU30T	KU30T	KU30T		KU30T	

FOR LATHE

Kennametal's latest Lathe Innovations...

...engineered specifically to boost your Lathe productivity and profitability!

NEW — From the world leader in turning tool technology!



New Top Notch® Threading & Grooving Grades for High-Speed Machining

KC5010™/KC5025™

New improved coating provides superior wear resistance at elevated temperatures — as a result, you can run faster... with reduced machine cycle times, less costs, and added security!

For Top Notch Grooving, see page B6!

For Top Notch Threading, see page C30!

KC9110™

For unparalleled productivity in grooving of steel and cast iron up to 1,300 sfm; exceptional at high speeds, even in gummy or low-carbon steels!

Kenclamp™ System

For absolutely the quickest insert indexing in the metalcutting industry!

For Kenclamp Toolholders, see page A152!

For Kenclamp Boring Bars, see page A204!

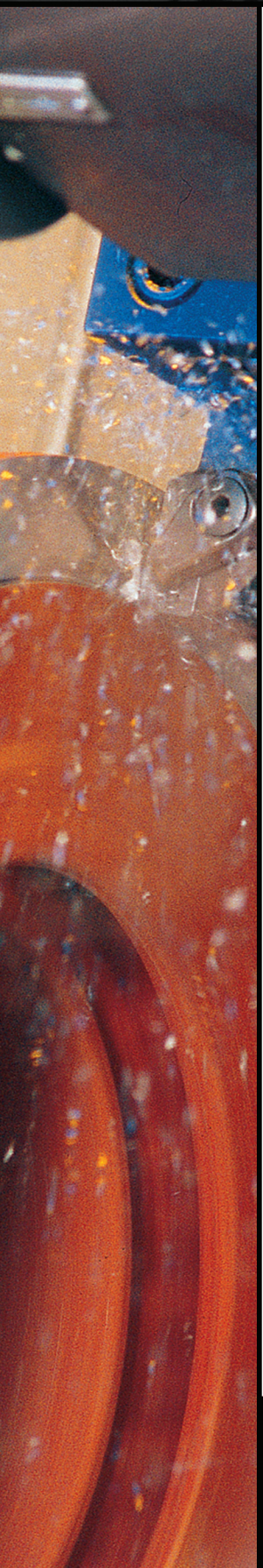
A4™ Groove & Turn System

One tool for turning, facing, grooving, face- grooving, and cut-off... in OD and ID applications — that means exceptionally fast cycle times, no turret indexes!

See page B36!

KENNAMETAL®

ENGINEERING YOUR COMPETITIVE EDGE



To Our Valued Customers:

Since its inception in 1938, Kennametal has precisely understood how to improve your manufacturing performance and profitability – by introducing unparalleled products and services to reduce your operating costs and lead times.

These 500+ pages showcase our latest lathe innovations… all specifically engineered to significantly boost your overall productivity, even in the most challenging turning, grooving, threading, boring, or cut-off applications.

At Kennametal, the world's premier tooling solutions supplier, we're engineering your competitive edge!

Kennametal Global
Lathe Tooling Team

KENNAMETAL®
ENGINEERING YOUR COMPETITIVE EDGE

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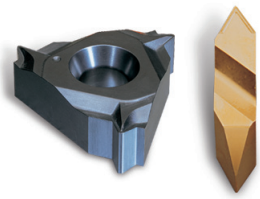
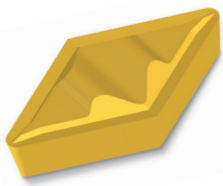
Grooving & Cut-Off Tools B1

Threading Tools C1



Application-Specific Tools D1



Kennametal Classic Products & Appendix E1

Style / Page								
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	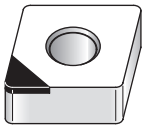	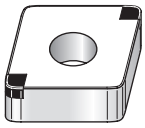	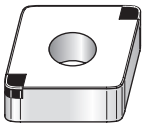	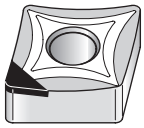	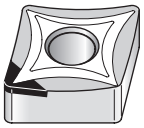	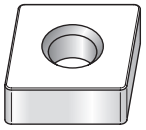	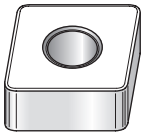	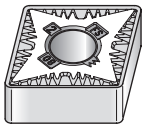
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	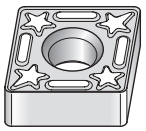	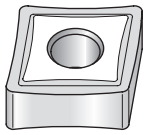	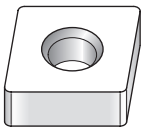	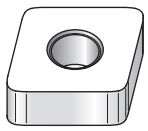	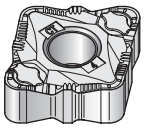	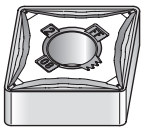	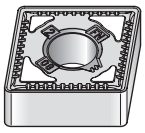	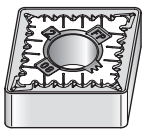
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	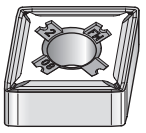	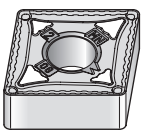	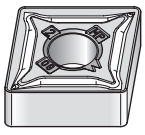	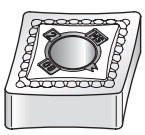	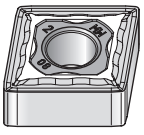	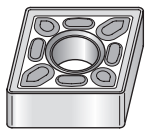	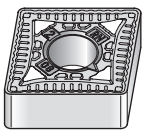	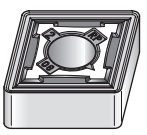
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	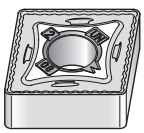	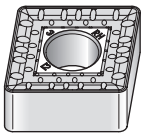	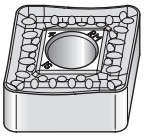	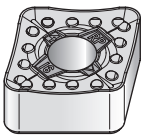	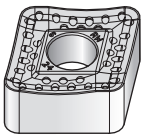	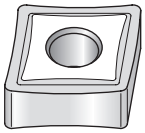	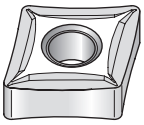	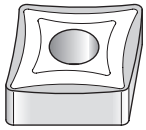
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	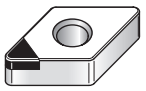	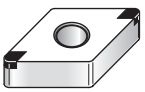	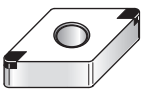	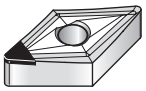	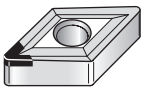	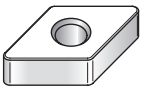	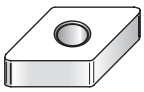	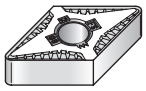
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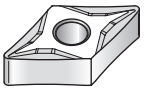
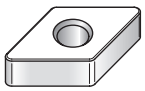
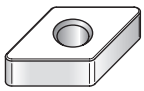
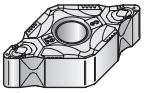
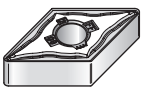
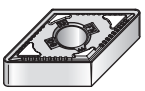
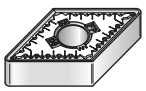
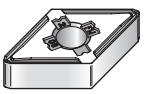
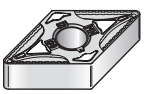
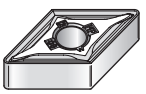
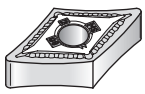
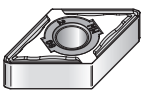
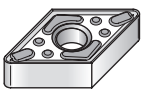
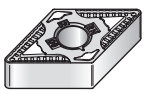
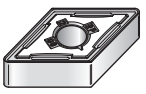
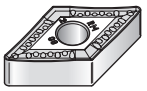
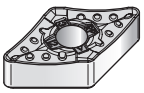
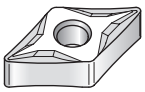
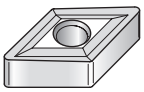
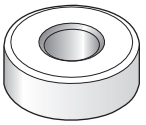
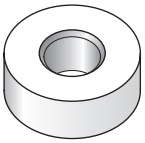
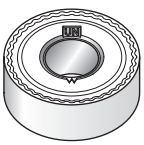
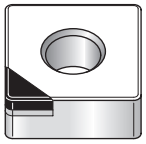
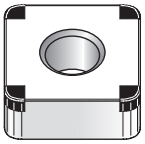
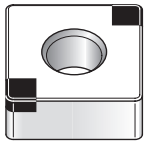
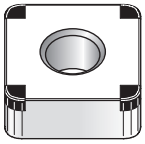
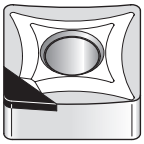
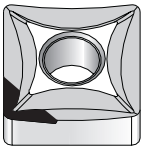
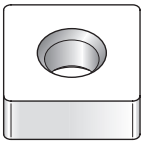
								
Style / Page	**DNMG-FW A56**	**DNMG-MN A56**	**DNMG-MP A56**	**NEW DNMG-MS A56**	**DNMG-MW A56**	**NEW DNMG-P A58**	**DNMG-RN A58**	**DNMG-RP A58**
								
Style / Page	**DNMG-UN A58**	**DNMM-RM A58**	**NEW DNMM-RP A58**	**NEW DNMP-K A58**	**DNMS A60**	**NEW RNGA A60**	**RNMA A60**	**RNMG-RN A60**
								
Style / Page	**RNMG-UN A60**	**SNGA A60**	**NEW SNGA-FW/MW MT A60**	**SNGA-MT A62**	**NEW SNGA-MT A62**	**SNMS-E A62**	**SNMS-F A62**	**SNGA A62**
								

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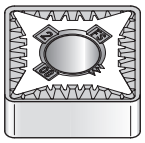
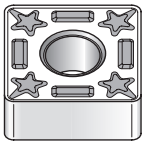
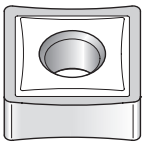
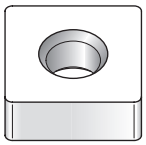
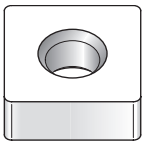
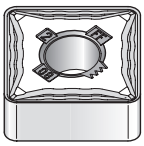
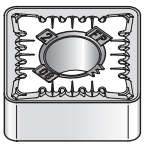
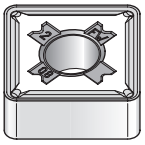
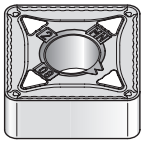
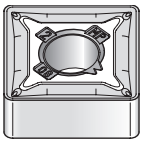
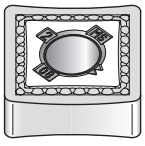
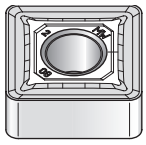
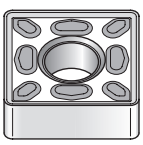
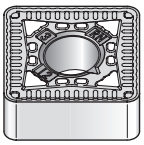
								
Style / Page	SNMG-FW A66	SNMG-MN A66	SNMG-MP A66	NEW SNMG-MS A66	SNMG-MW A66	NEW SNMG-P A66	SNMG-RN A66-A68	SNMG-RP A68
								
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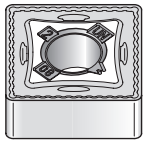
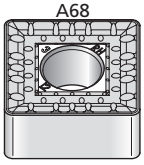
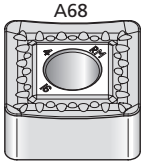
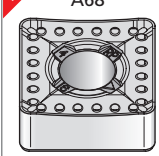
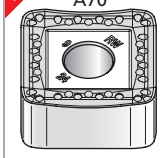
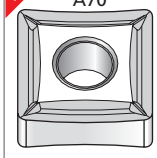
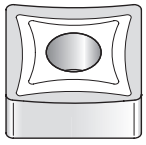
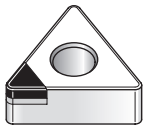
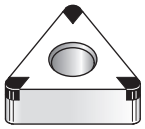
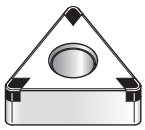
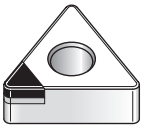
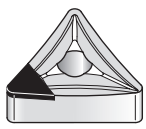
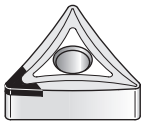
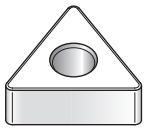
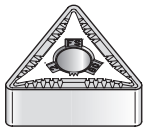
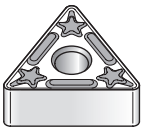
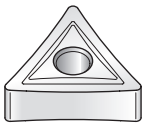
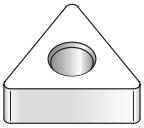
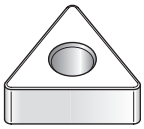
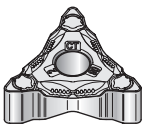
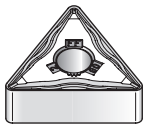
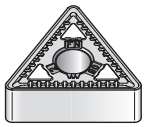
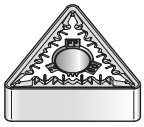
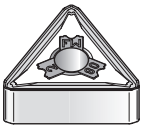
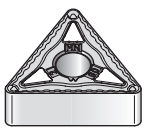
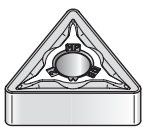
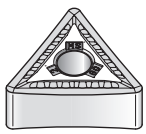
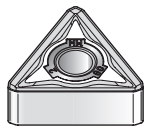
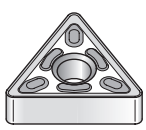
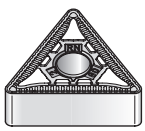
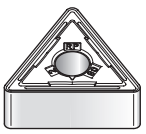
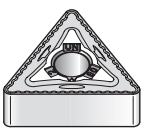
								
Style / Page	TNGA-FW/MW MT A70	NEW TNGA-MT A70	TNMA A70	TNMS-E A70	TNMS-F A72	TNGA A72	NEW TNGG-FS A72	TNGG-LF A72
								
Style / Page	TNGP A72	TNMA A72	TNMA-T A74	NEW TNMG-CT A74	TNMG-FF A74	TNMG-FN A74	TNMG-FP A74	TNMG-FW A74
								
Style / Page	TNMG-MN A74	TNMG-MP A74	NEW TNMG-MS A76	TNMG-MW A76	NEW TNMG-P A76	TNMG-RN A76	TNMG-RP A76	TNMG-UN A76
								
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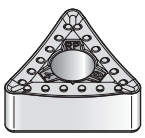
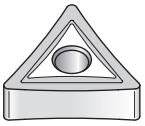
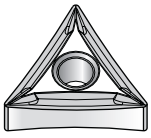
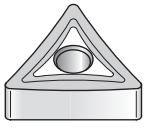
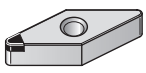
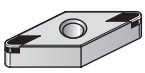
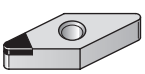
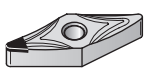
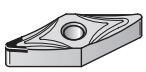
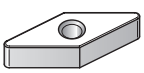
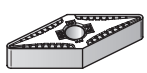
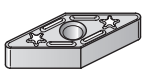
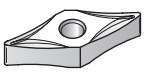
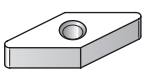
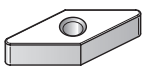
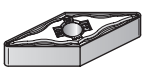
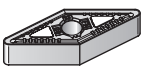
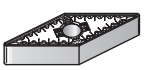
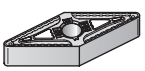
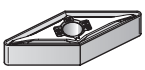
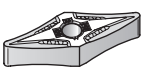
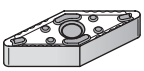
								
Style / Page	VNMS-E A80	VNMS-F A80	VNGA A80	NEW VNGG-FS A80	VNGG-LF A80	VNGP A80	VNMA A80	VNMA-E A82
								
Style / Page	VNMG-FF A82	VNMG-FN A82	VNMG-FP A82	VNMG-MN A82	VNMG-MP A82	NEW VNMG-MS A82	NEW VNMG-P A82	
								

ANSI/ISO Turning Inserts

KENLOC Inserts

Style / Page								
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	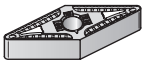	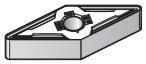	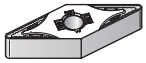	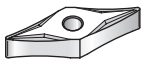	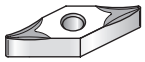	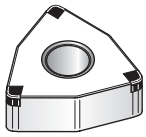	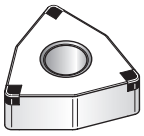	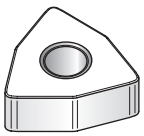
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	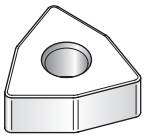	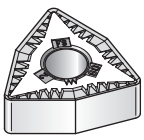	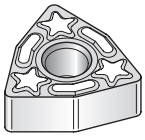	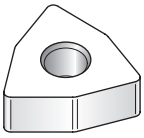	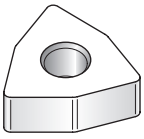	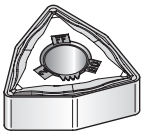	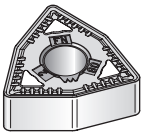	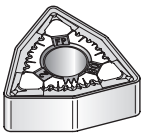
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	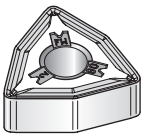	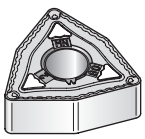	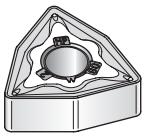	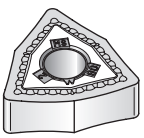	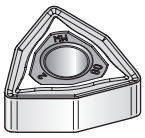	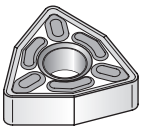	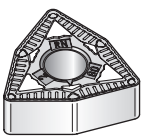	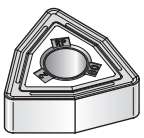
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	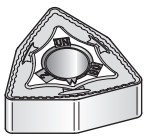							

KENDEX negative inserts

Style / Page								
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	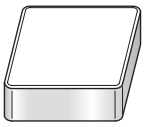	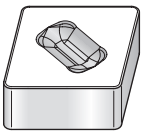	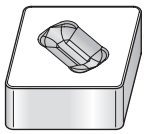	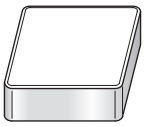	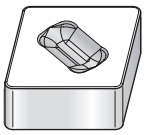	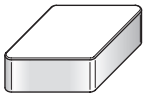	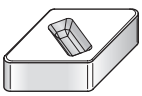	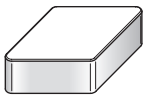
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	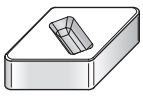	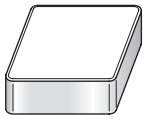	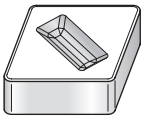	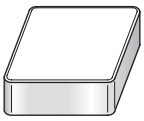	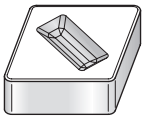	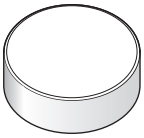	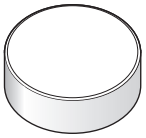	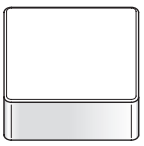
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	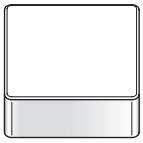	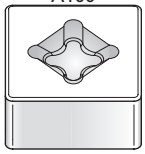	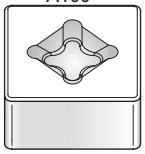	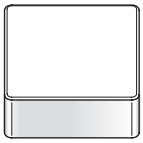	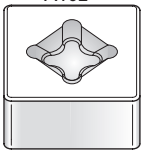	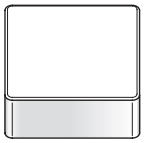	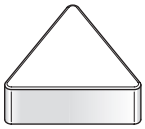	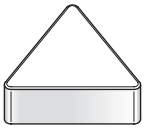
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	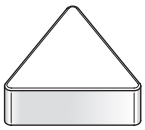			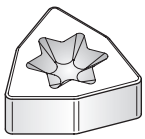				

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	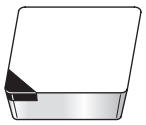	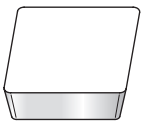	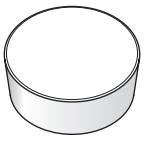	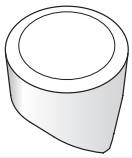	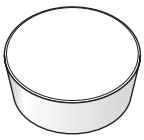	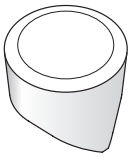	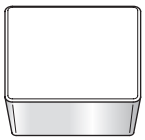	
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	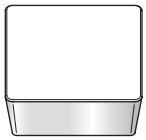	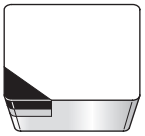	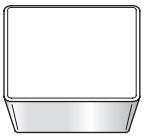	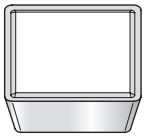	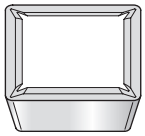		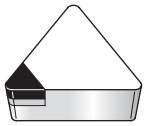	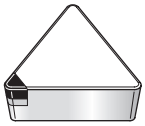
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	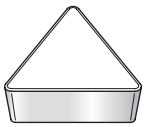	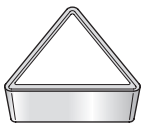	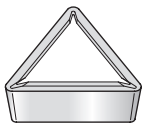	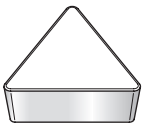				

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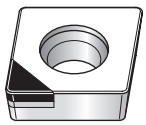
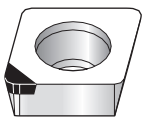
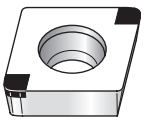
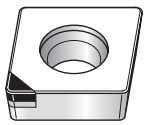
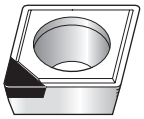
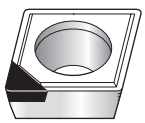
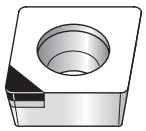
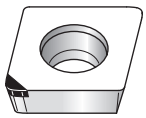
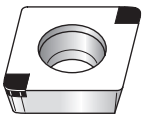
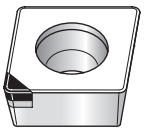
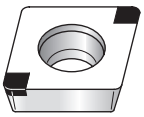
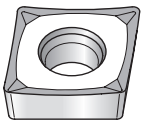
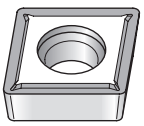
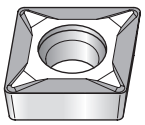
								
Style / Page	CPGW -E -F A118	NEW CPGW-FWM A118	NEW CPGW-FWMT A118	CPGW-M A118	NEW CPGW-MT A118	CCGT-HP A118	CCGT-LF A120	CCMT-11 A120
								
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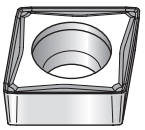
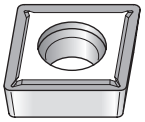
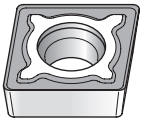
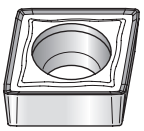
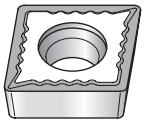
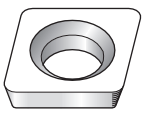
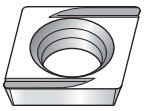
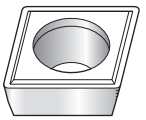
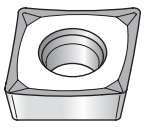
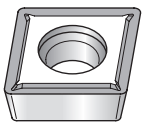
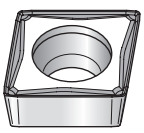
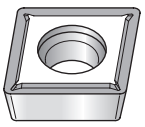
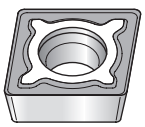
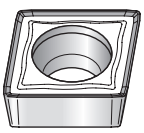
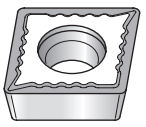
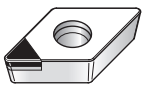
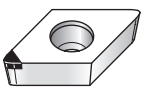
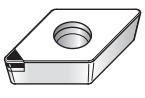
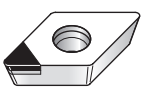
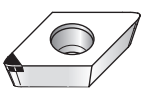
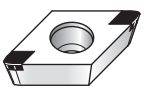
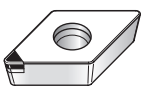
								
Style / Page	CPGT-HP A122	CPGT-LF A122	CPMT-FW A122	CPMT-LF A124	CPMT-MF A124	CPMT-MW A124	CPMT-UF A124	DCGW -F -S A124
								
Style / Page	NEW DCGW-FWM A124	NEW DCGW-FWMT A124	DCGW-M A126	NEW DCGW-MT A126	DPGW A126	NEW DPGW-FWM A126	NEW DPGW-FWMT A126	DPGW-M A126
								

Style / Page								
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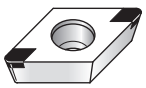
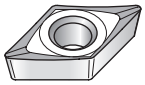
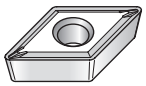
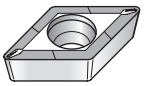
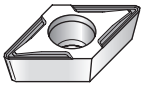
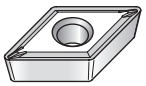
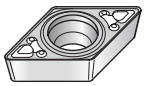
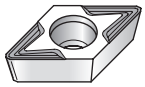
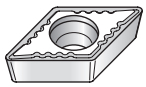
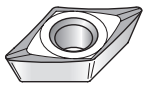
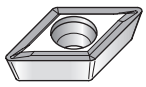
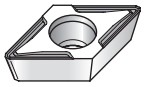
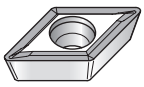
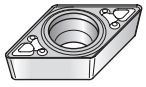
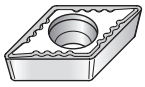
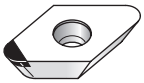
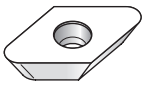
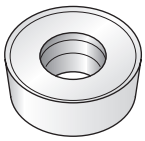
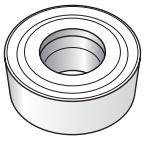
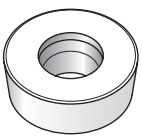
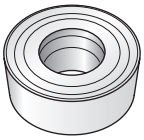
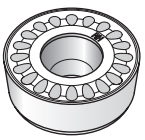
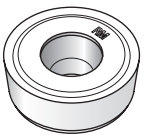
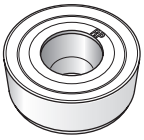
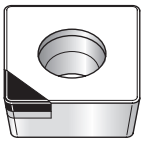
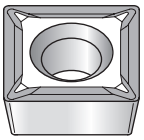
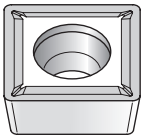
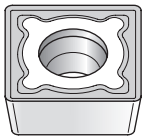
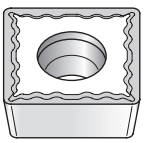
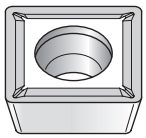
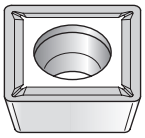
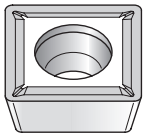
								
Style / Page	DCMT-UF A128	DPGT-HP A130	DPGT-LF A130	DPMT-FW A130	DPMT-LF A130	DPMT-MF A130	DPMT-UF A130	FFEW A130
								
Style / Page	FFEW A132	RCGT-HP A132	NEW RCGT-MS A132	RCGW-T A132	RCMT A132	NEW RCMT-RH A132	RCMT-RM A132	NEW RCMT-RP A134
								
Style / Page	SCGW A134	SCMT-11 A134	SCMT-LF A134	SCMT-MF A134	SCMT-UF A134	SPGH A134	SPGT-LF A136	SPMT-LF A136
								
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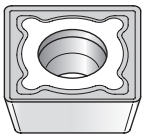
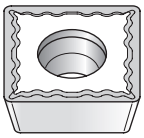
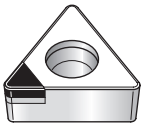
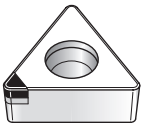
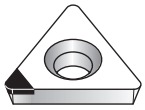
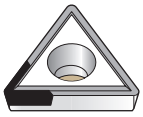
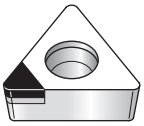
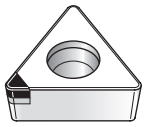
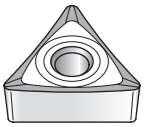
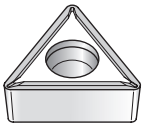
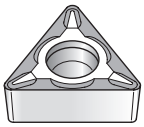
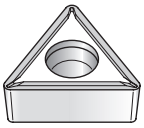
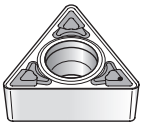
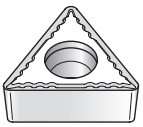
								
Style / Page	TPGW-M A138	TPGW-MT A138	TCGT-HP A138	TCGT-LF A138	TCMT-11 A138	TCMT-LF A140	TCMT-MF A140	TCMT-UF A140
								
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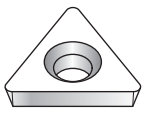
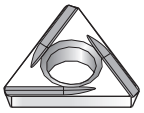
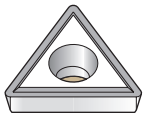
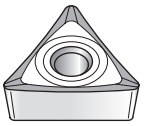
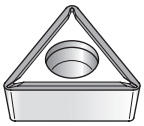
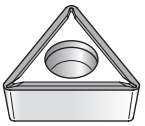
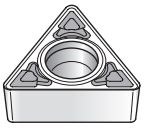
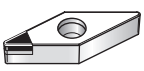
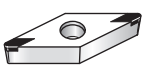
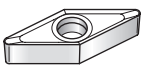
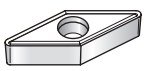
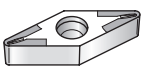
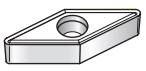
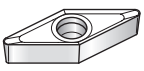
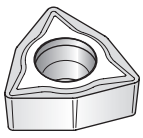
								
Style / Page	VBGW -E -F A142	VBGW-MT A142	VBGT-HP A142	VBGT-LF A144	VBMT-11 A144	VBMT-LF A144	VCGT-HP A144	WCMT-LF A144
								
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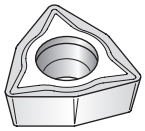
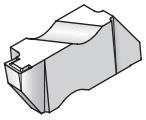
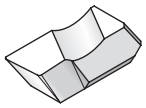
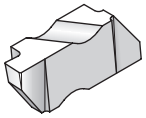
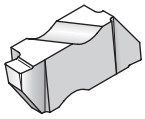
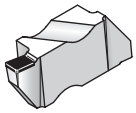
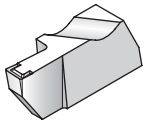
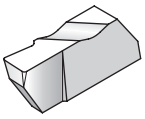
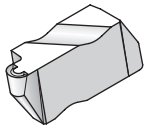
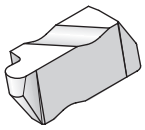
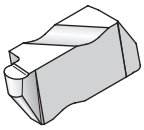
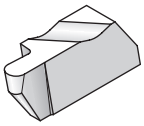
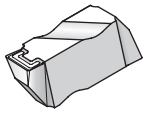
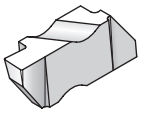
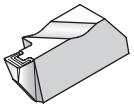
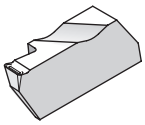
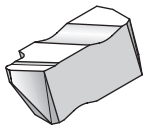
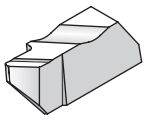
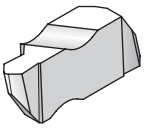
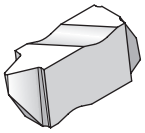
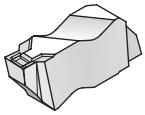
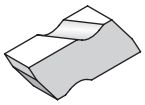
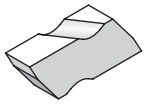
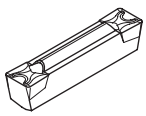
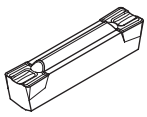
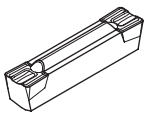
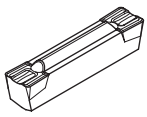
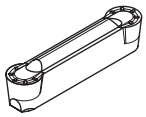
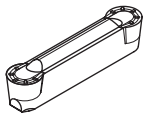
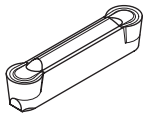
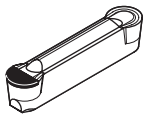
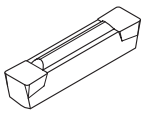
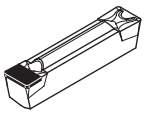
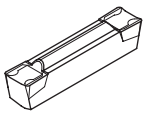
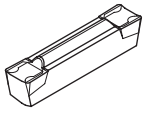
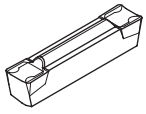
								

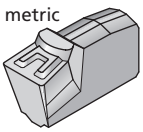
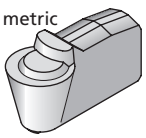
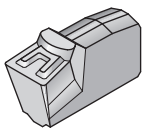
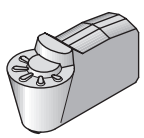
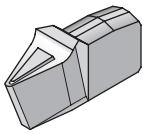
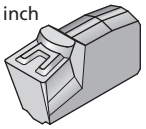
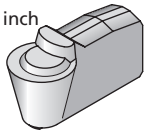
TOP NOTCH Grooving Inserts

Style / Page								
Style Page	NG-K B12-B13	NG-1L B14	NG B14-B15	NGP B15	NGP-E B16	NGD-K B16	NGD B16	NR-K B17
								
Style Page	NR B17	NRP B17	NRD B18	NF-K B19	NF B19	NFD-K B19	NFD-KI B20	NP-K B20
								
Style Page	NPD-K B20	NU B18	NV B18	NEW NGC-K B21	NB B22	NBD B22		
								

A4 Groove and Turn Inserts

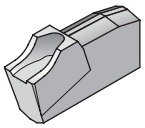
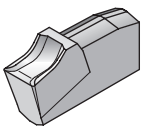
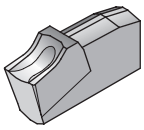
Style / Page								
Style Page	NEW A4G-U-GMN B44	NEW A4G-U-GMP B44	NEW A4G-P-GMN B44	NEW A4G-P-GMP B44	NEW A4R-U-GMN B45	NEW A4R-P-GMN B45	NEW A4R-P-GMP B45	NEW A4R-P-E B45
								
Style Page	NEW A4G-U-B B46	NEW A4G-P-E B46	NEW A4C-N-CF B47	NEW A4C-L-CF B47	NEW A4C-R-CF B47			
								

A3 Deep Grooving Inserts

Style / Page								
Style Page	A3G -P -DF B67	A3R -P -DF B67	A3G -U -DM B68	A3R -U -DR B68	A3V -U -DM B68			
	metric 	metric 						
Style Page	A3G -P -DF B69	A3G -P -DF B69						
	inch 	inch 						

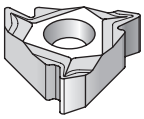
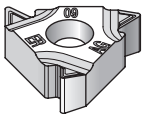
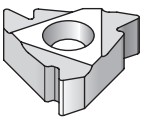
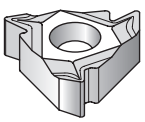
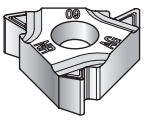
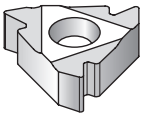
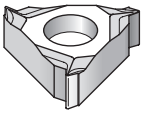
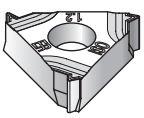
Cut-Off Inserts

A2 Cut-Off Inserts

Style Page	A2-CF B91	A2-CM B92	A2-CR B93					
								

Threading Inserts

LT Threading Inserts

Style Page	LT-ER-60CB C10	NEW LT-ER-60K C10	LT-ER/L-60 C10	LT-NR-60CB C10	NEW LT-NR-60K C11	LT-NR/L-60 C11	LT-ER-ISOCB C11	NEW LT-ER-ISOK C11
								
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	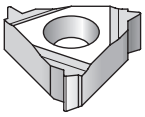	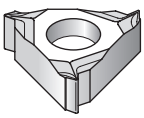	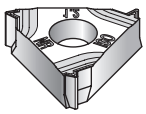	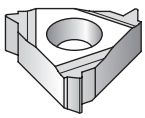	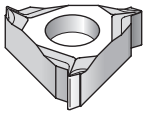	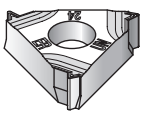	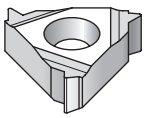	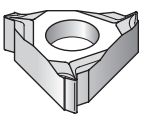
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	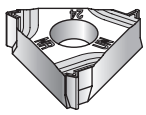	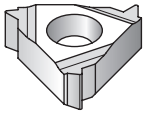	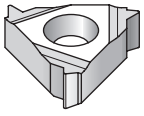	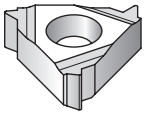	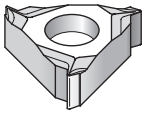	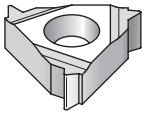	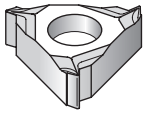	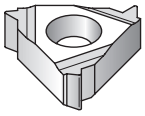
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	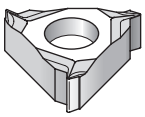	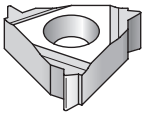	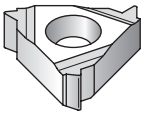	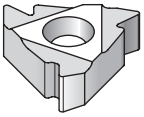	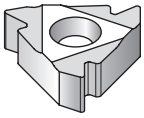	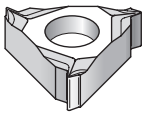	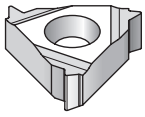	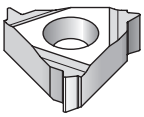
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	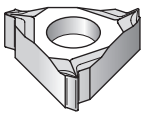	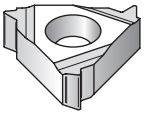	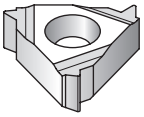	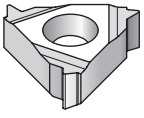	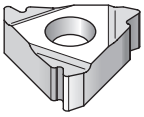	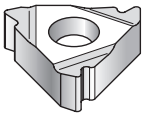	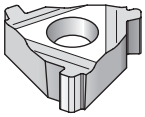	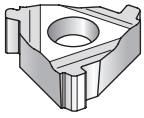
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	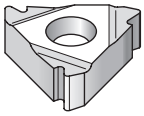	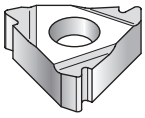	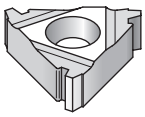	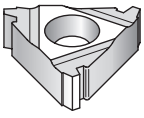	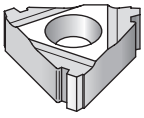	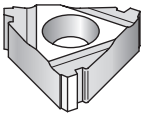	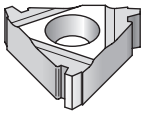	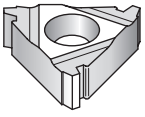
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	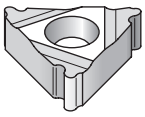	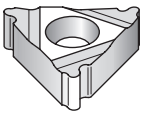						

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		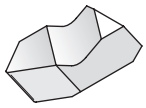				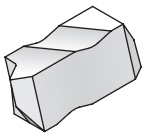	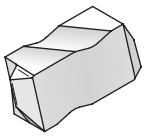	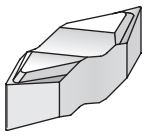
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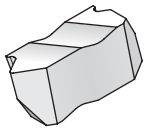
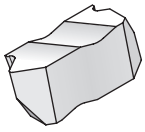
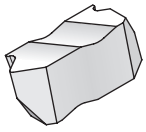
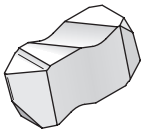
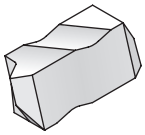
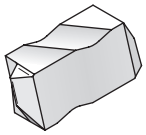
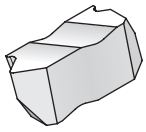
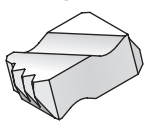
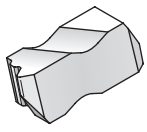
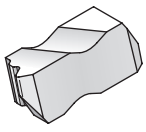
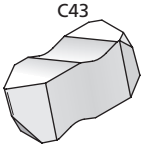
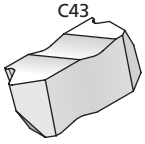
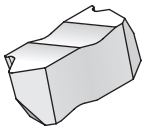
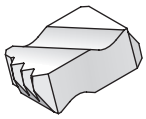
								
Style Page	NDC-V C42	NDC-V-M (MULTI TOOTH) C42	NWC-E C42	NWC-I C43	ND (Partial Profile) C43	NDC (Cresting) C43	NDC-RD C44	NDC-RD-M (MULTI TOOTH) C44
								
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	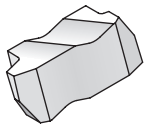	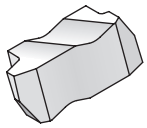	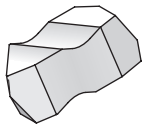	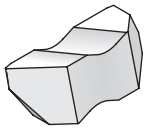				

Profiling Inserts

TOP NOTCH Profiling Inserts

Style / Page								
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	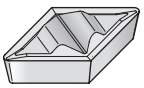	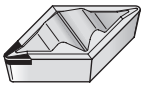	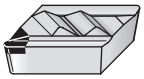	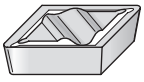	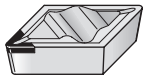	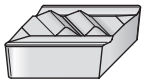	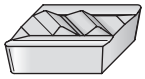	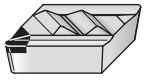
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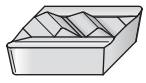
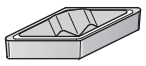
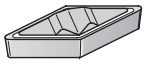
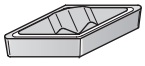
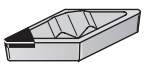
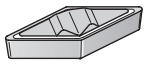
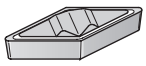
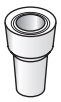
								

KENDEX MINI Inserts

Style / Page								
Style Page	BPGF D22							

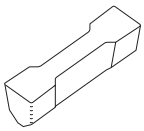
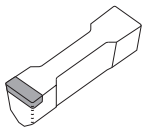
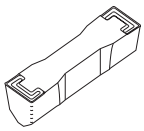
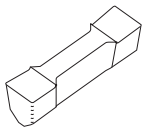
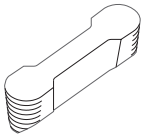
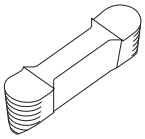
K-LOCK Inserts

Positive Profile & Boring Inserts

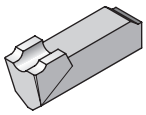
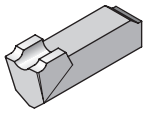
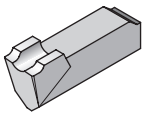
Style Page	RCGK-FS D18	RCGK-HP D18	RCMK D18					
								

KENDEX Deep Grooving Inserts

Deep Grooving Inserts

Style Page	GC E39	GC E39	GC-K E39	GCP E39	GR E39	GRP E39		
								

SEPARATOR Cut-Off Inserts

Style Page	GS-N E40	GS-R E40	GS-L E40					
								

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Turning Tools

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KENNA PERFECT – Selection Guide

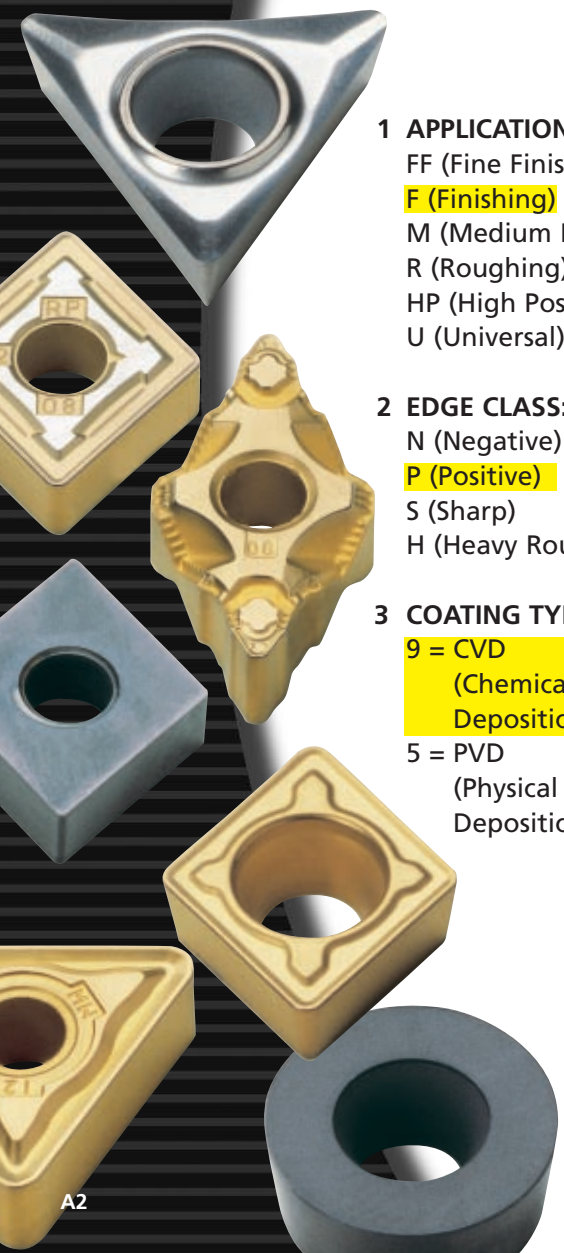
A system of grades, geometries, and application guidelines to provide optimal solutions for your metalcutting needs. It's easy to determine which Kennametal chip-control cutting tool will work best in your specific workpiece materials and applications!

by Geometry… **by Grade…**

CNMG432FP **KC9225**

1 2 3 4 5

…and by looking at the actual insert!



1 APPLICATION:
FF (Fine Finishing)
F (Finishing)
M (Medium Machining)
R (Roughing)
HP (High Positive)
U (Universal)

2 EDGE CLASS:
N (Negative)
P (Positive)
S (Sharp)
H (Heavy Roughing)

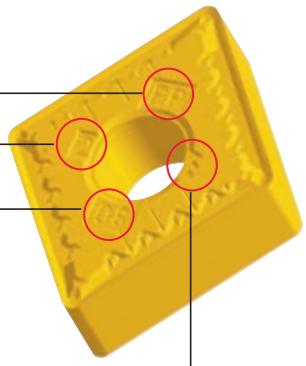
3 COATING TYPE:
9 = CVD (Chemical Vapor Deposition)
5 = PVD (Physical Vapor Deposition)

4 KENNA PERFECT MATERIAL GROUP:
1 = Steel
2 = Stainless Steel
3 = Cast Iron
4 = Non-Ferrous
5 = High-Temp Alloy
6 = Hardened Material
0 = Universal Machining

5 WEAR/TOUGHNESS ISO RANGE:
10 = Highly Wear Resistant to
50 = Extremely Tough

NOSE RADIUS:
both ANSI and ISO

APPLICATION:
FF, FN, MN, RN, FP, MP, RP, RH, or UN



GEOMETRY:
▼ Roughing
▼▼ Medium Machining
▼▼▼ Finishing
▼▼▼▼ Fine Finishing

Positive Inserts

SCREW-ON Inserts

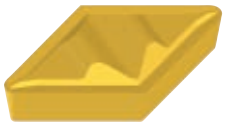
- Screw-On inserts are your first choice for ID turning of all materials and OD turning on small to medium-size lathes.
- Available in flat top and chip control geometries with both molded and ground peripheries. Suitable for all workpiece materials.

See pages A116-A145 for product listing.

KENDEX and V-Bottom Inserts

- Kendex positive and V-Bottom inserts are your first choice for productive machining of high-temperature alloys on medium to large lathes.
- Available in flat top geometries with ground periphery.

See pages A106-A115 for Kendex positive product listing.
See pages A106-A109 for V-Bottom product listing.



TOP NOTCH Profiling Inserts

- First choice for high-production profiling.
- Unique insert clamping design offers superior rigidity.
- Available in chip control geometries with both molded and ground peripheries.

  Suitable for all workpiece materials.

See pages D4-D7 for product listing.

K-LOCK Inserts

- K-Lock inserts are ideal for deep grooving and profiling.
- A unique insert clamping system allows for unimpeded chip flow.
- Available in molded and ground peripheries.

See pages D18-D19 for product listing.

Negative Inserts

KENLOC Inserts

- Kenloc inserts are your first choice for general machining of all materials on medium to large lathes.
- Kenloc inserts offer the best economy for high metal removal rates.
- Available in flat top and chip control geometries with both molded and ground peripheries. Suitable for all workpiece materials.

See pages A40-A91 for product listing.

KENDEX Inserts

- Ceramic Kendex inserts are a great choice for productive machining of high-temp alloys.
- Kendex negative rake inserts are also recommended for the machining of hardened materials and cast irons.
- Available in flat top geometries with molded and ground peripheries.
- Wide selection of standard toolholders are offered.

See pages A92-A105 for product listing.

TOP NOTCH TURNING Inserts

- Ceramic Top Notch Turning inserts are your first choice for high-speed roughing and finishing of cast iron parts.
- Available in flat top geometries with molded and ground peripheries.

See pages A92-A105 for product listing.

KENNA PERFECT Insert Selection System

KENNA PERFECT, Kennametal's 3-step insert selection system, makes choosing and applying the most productive tool as easy as 1, 2, 3. Tool recommendations are based on six workpiece material groups, optimizing selection accuracy.

Example:

6 workpiece material groups

1st Step – Select the Insert Geometry

Given: depth of cut = .040" (1,0 mm) and feed = .016 ipr (0,4 mm)
Unknown: insert geometry
Solution: -MN

2nd Step – Select the Grade

Given: cutting conditions: lightly interrupted cut
Geometry: -MN
Unknown: grade
Solution: KC9125

3rd Step – Select the Cutting Speed

Given: grade KC9125
cutting conditions
material AISI 1010
Unknown: cutting speed
Solution: 925 sfm

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

- Steel
- Stainless Steel
- Cast Iron
- Non-Ferrous
- High-Temp Alloys
- Hardened Materials

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

-RN -RP* (positive)

▼▼ Medium Machining

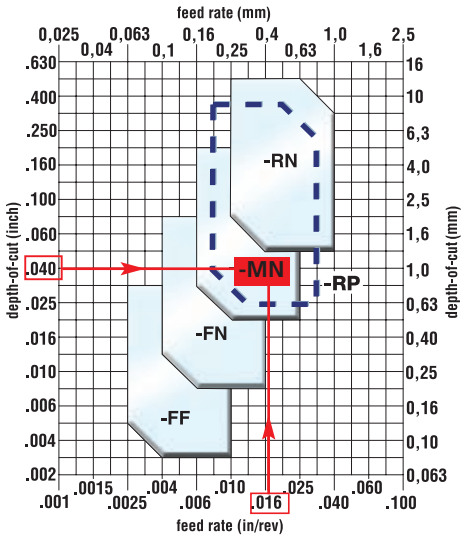
-MN

▼▼▼ Finishing

-FN

▼▼▼▼ Fine Finishing

-FF



*-RP – Supplemental geometry for high-strength materials

2nd Step – Select the Grade

Cutting Condition	Negative Insert Geometry -FF ▼▼▼▼	-FN ▼▼▼	-MN ▼▼	-RN ▼	-RP ▼
heavily interrupted cut	KC9110	KC9125	KC9040*	KC9040*	KC9040*
lightly interrupted cut	KC9110	KC9125	KC9125	KC9125	KC9125
varying depth of cut, casting or forging skin	KT315	KC9110	KC9110	KC9110	KC9110
smooth cut, pre-turned surface	KT315	KT315	KC9110	KC9110	KC9110

3rd Step – Select the Cutting Speed

Low-Carbon (< 0,3% C) and Free-Machining Steel
AISI: 1008, 1010, 1018, 1020, 1026, 10L18, 10L45, 10L50, 1108, 1117, 1141, 1151, 11L44, 1200 series, and 12L14

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 450 (135) 600 (180) 750 (225) 900 (275) 1050 (320) 1200 (360) 1350 (410) 1500 (455)	Starting Conditions sfm	m/min
P 1	KT315		1450	440
	KC9110/KC9315		1320	400
	KC9125/KC9225/KC5010		925	280
	KC9040*/KC9240/KC8050		700	215

New KENNA PERFECT Material Group Selection Guide:

To optimize speed recommendations, KENNA PERFECT Material Sub-Groups have been added to each of the six workpiece material groups.

Material	Material Group ISO Code	No. of Material Sub-Groups
Steel	P	1 - 6
Stainless Steel	M	1 - 3
Cast Iron	K	1 - 3
Non-Ferrous	N	1 - 8
High-Temp Alloys	S	1 - 4
Hardened Materials	H	1

see page E54 for KENNA PERFECT Material Group Selection Guide

*Grade KC9140 available Spring 2005

KENNA PERFECT – Steel

Carbon, Alloy, and Tool Steels up to 450 HB (48 HRC)

1st Step – Select the Insert Geometry

Negative Wiper Inserts

Roughing Wiper

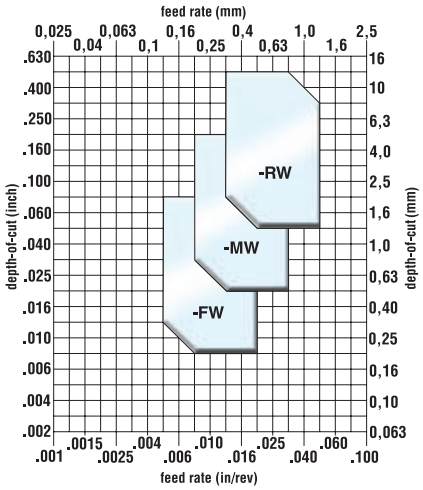
-RW

Medium Wiper

-MW

Finishing Wiper

-FW



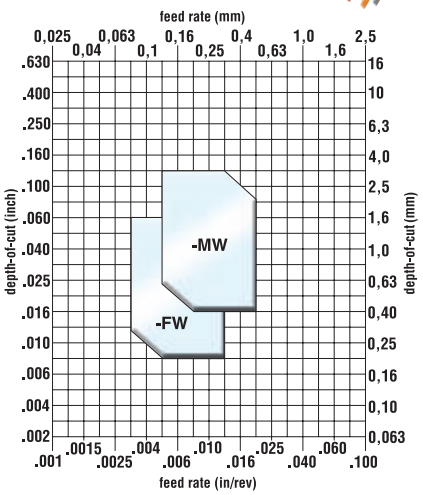
Positive Wiper Inserts

Medium Wiper

-MW

Finishing Wiper

-FW



2nd Step – Select the Grade

Cutting Condition	Negative Insert Geometry			Positive Insert Geometry	
	-FW	-MW	-RW	-FW	-MW
heavily interrupted cut	–	–	KC8050	–	KC8050
lightly interrupted cut	KC9110	KC9125	KC9125	KC9225	KC9225
varying depth of cut, casting or forging skin	KT315	KC9110	KC9110	KC9315	KC9315
smooth cut, pre-turned surface	KT315	KC9110	KC9110	KT315	KT315

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

-RN -RP* (positive)

▼▼ Medium Machining

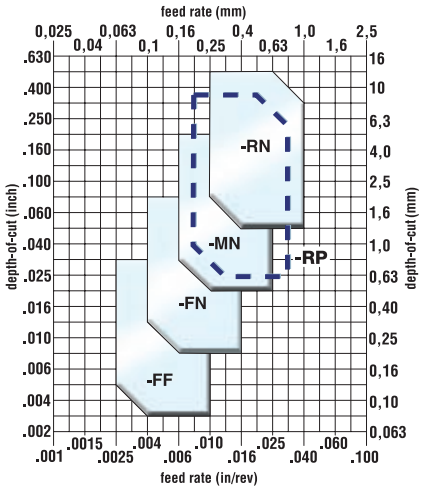
-MN

▼▼▼ Finishing

-FN

▼▼▼▼ Fine Finishing

-FF



Positive Inserts

▼▼ Medium Machining

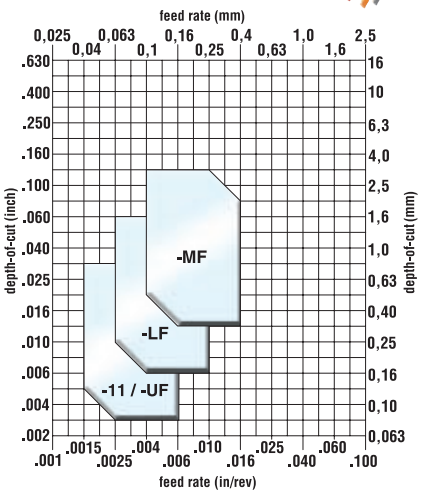
-MF

▼▼▼ Finishing

-LF

▼▼▼▼ Fine Finishing

-11 -UF



*-RP – Supplemental geometry for high-strength materials

2nd Step – Select the Grade

Cutting Condition	Negative Insert Geometry					Positive Insert Geometry			
	-FF ▼▼▼▼	-FN ▼▼▼	-MN ▼▼	-RN ▼	-RP ▼	-11 ▼▼▼▼	-UF ▼▼▼▼	-LF ▼▼▼	-MF ▼▼
heavily interrupted cut	KC9110	KC9125	KC9040*	KC9040*	KC9040*	–	KC5010	KC9125	KC9240
lightly interrupted cut	KC9110	KC9125	KC9125	KC9125	KC9125	–	KC5010	KC9125	KC9125
varying depth of cut, casting or forging skin	KT315	KC9110	KC9110	KC9110	KC9110	KT315	–	KC9110	KC9110
smooth cut, pre-turned surface	KT315	KT315	KC9110	KC9110	KC9110	KT315	–	KT315	KC9110

*Grade KC9140 available Spring 2005

3rd Step – Select the Cutting Speed

Low-Carbon (< 0,3% C) and Free-Machining Steel
AISI: 1008, 1010, 1018, 1020, 1026, 10L18, 10L45, 10L50, 1108, 1117, 1141, 1151, 11L44, 1200 series, and 12L14

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	1350 (410)	1500 (455)	Starting Conditions sfm	m/min
P 1	KT315									1450	440
	KC9110/KC9315									1320	400
	KC9125/KC9225/KC5010									925	280
	KC9040*/KC9240/KC8050									700	215

Medium- and High-Carbon Steels (> 0,3% C)
AISI: 1035, 1040, 1045, 1055, 1080, 1085, 1090, 1095, 1525, 1541, 1548, 1551, 1561, and 1572

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	1350 (410)	Starting Conditions sfm	m/min
P 2	KT315								880	270
	KC9110/KC9315								800	250
	KC9125/KC9225/KC5010								650	200
	KC9040*/KC9240/KC8050								500	150

Alloy Steels and Tool Steels (≤ 330 HB) (≤ 35 HRC)
Alloy Steels: AISI 1300, 2000, 3000, 4000, 5000, 6000, 7000, and 8000 series steels. **Tool Steels:** SAE classes: M and T; hot and cold work SAE classes: A, D, H, O, and S; wrought high carbon / low alloy W1, W2, L2, P1, P6, and P20

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	1350 (410)	Starting Conditions sfm	m/min
P 3	KT315								680	210
	KC9110/KC9315								630	190
	KC9125/KC9225/KC5010								510	155
	KC9040*/KC9240/KC8050								400	120

Alloy Steels and Tool Steels (340 - 450 HB) (36 - 48 HRC)
Alloy Steels: AISI 1300, 4000, 5000, and 8000 series steels. **Tool Steels:** SAE classes: M and T; hot and cold work SAE classes: A, D, H, O, and S; wrought high carbon / low alloy W1, W2, L2, P1, P6, and P20.

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 200 (60)	300 (90)	400 (120)	500 (180)	600 (180)	700 (210)	900 (240)	Starting Conditions sfm	m/min
P 4	KT315								530	160
	KC9110/KC9315								480	150
	KC9125/KC9225/KC5010								360	110
	KC9040*/KC9240/KC8050								325	100

Ferritic, Martensitic, and PH Stainless Steels (≤ 330 HB) (≤ 35 HRC)
400 and 500 series, and precipitation hardening (PH) **AISI:** 410, 416, 416F, 416Se, 420F, 430F, 4389F Se, 440, 440C, 502, 504, 17-4PH, PH 13-8 Mo, and 15-5 PH

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 400 (120)	500 (150)	600 (180)	700 (210)	800 (240)	900 (275)	1000 (300)	Starting Conditions sfm	m/min
P 5	KT315								800	250
	KC9110/KC9315								720	220
	KC9125/KC9225/KC5010								660	200
	KC9040*/KC9240/KC8050								450	140

Ferritic, Martensitic, and PH Stainless Steels (340 - 450 HB) (36 - 48 HRC)
400 and 500 series, and precipitation hardening (PH) **AISI:** 410, 416, 416F, 416Se, 420F, 430F, 4389F Se, 440, 440C, 502, 504, 17-4PH, PH 13-8 Mo, and 15-5 PH

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 350 (105)	450 (135)	550 (170)	650 (200)	750 (225)	850 (260)	950 (285)	Starting Conditions sfm	m/min
P 6	KT315								660	200
	KC9110/KC9315								600	180
	KC9125/KC9225/KC5010								500	150
	KC9040*/KC9240/KC8050								350	110

*Grade KC9140 available Spring 2005

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

KENNA PERFECT – Stainless Steel

Austenitic Stainless Steels

1st Step – Select the Insert Geometry

Negative Wiper Inserts

Roughing Wiper

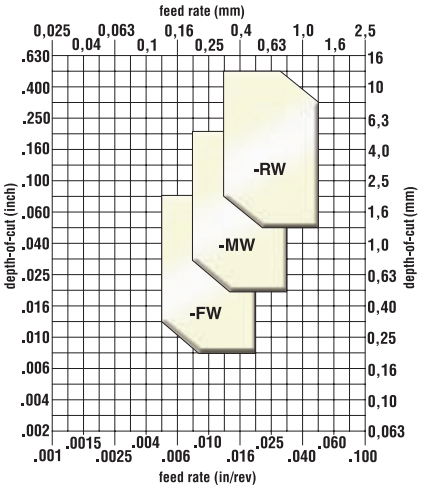
-RW

Medium Wiper

-MW

Finishing Wiper

-FW



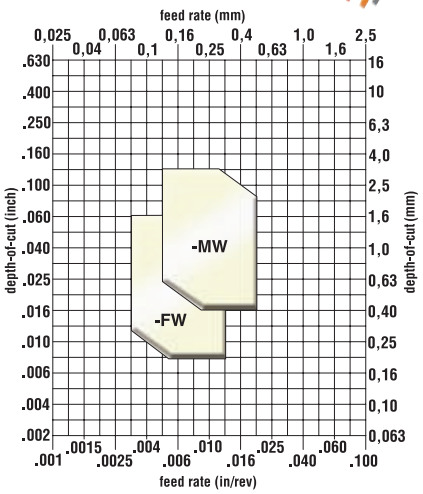
Positive Wiper Inserts

Medium Wiper

-MW

Finishing Wiper

-FW



2nd Step – Select the Grade

		Negative Insert Geometry			Positive Insert Geometry	
Cutting Condition		**-FW**	**-MW**	**-RW**	**-FW**	**-MW**
heavily interrupted cut		–	–	KC8050	–	–
lightly interrupted cut		KC9225	KC9240	KC8050	KC9225	KC9225
varying depth of cut, casting or forging skin		KC5010	KC9225	KC8050	KC5010	KC5010
smooth cut, pre-turned surface		KT315	KC9225	KC8050	KT315	KT315

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

-RP -P

▼▼ Medium Machining

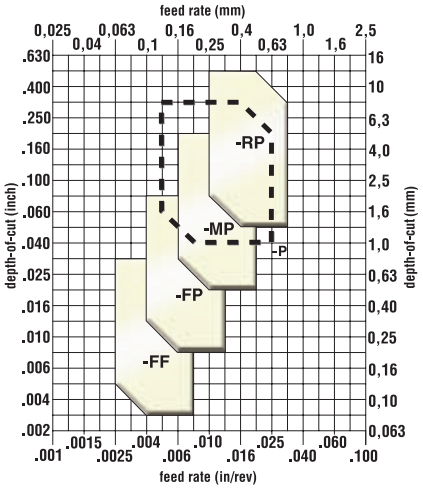
-MP

▼▼▼ Finishing

-FP

▼▼▼▼ Fine Finishing

-FF



Positive Inserts

▼▼ Medium Machining

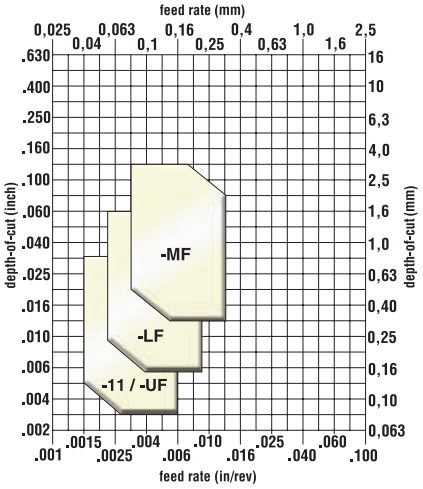
-MF

▼▼▼ Finishing

-LF ..GT-LF

▼▼▼▼ Fine Finishing

-11 -UF



2nd Step – Select the Grade

		Negative Insert Geometry					Positive Insert Geometry				
Cutting Condition		**-FF** ▼▼▼▼	**-FP** ▼▼▼	**-MP** ▼▼	**-P** ▼▼	**-RP** ▼	**-11** ▼▼▼▼	**-UF** ▼▼▼▼	**-LF** ▼▼▼▼	**..GT-LF** ▼▼▼	**-MF** ▼▼
heavily interrupted cut		KC5010	KC9225	KC9240	KC9240	KC9240	-	KC5010	KC9240	KC5025	KC9240
lightly interrupted cut		KC5010	KC9225	KC9240	KC9240	KC9240	-	KC5010	KC9225	KC5025	KC9240
varying depth of cut, casting or forging skin		KT315	KC5010	KC9225	KC9225	KC9225	KT315	-	KC5010	KC5010	KC9225
smooth cut, pre-turned surface		KT315	KT315	KC5010	KC5010	KC9225	KT315	-	KT315	KC5010	KC9225

3rd Step – Select the Cutting Speed

Austenitic Stainless Steel: **AISI:** 200, 201, 202, 209, 219, 301, 302, 303, 304, 304L, 305, 309

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 300 (90)	450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	Starting Conditions ◁▷ sfm	m/min
M 1	KT315				◁▷				750	230
	KC5010				◁▷				700	215
	KC9225				◁▷				600	185
	KC5025				◁▷				550	180
	KC8050				◁▷				550	170
	KC9240				◁▷				500	150
	KC9245				◁▷				400	120

Austenitic Stainless Steel: **AISI:** 310, 314, 316, 316L, 317, 321, 347, 384 ASTM Cast: XM-1, XM-5, XM-7, XM-21

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 300 (90)	450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	Starting Conditions ◁▷ sfm	m/min
M 2	KT315				◁▷				700	215
	KC5010				◁▷				650	200
	KC9225				◁▷				550	170
	KC5025				◁▷				500	165
	KC8050				◁▷				500	150
	KC9240				◁▷				450	140
	KC9245				◁▷				350	105

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture) **AISI:** 323, 329, F55, 2205, S329000

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 300 (90)	450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	Starting Conditions ◁▷ sfm	m/min
M 3	KT315				◁▷				650	200
	KC5010				◁▷				600	185
	KC9225				◁▷				500	150
	KC5025				◁▷				450	150
	KC8050				◁▷				450	140
	KC9240				◁▷				400	120
	KC9245				◁▷				300	90

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Ferritic, Martensitic, and PH Stainless Steels like those listed below have cutting characteristics similar to that of typical steels.
For recommendations on cutting these types of steels, please refer to page A7 (groups P5 and P6).

Ferritic, Martensitic, and PH Stainless Steels (330 - 450 HB) (up to 48 HRC)
400 and 500 series, and precipitation hardening (PH) **AISI:** 410, 416, 416F, 416Se, 420F, 430F, 4389F Se, 440, 440C, 502, 504, 17-4PH, PH 13-8 Mo, and 15-5 PH

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

KENNA PERFECT WIPER – Cast Iron

Ductile and Gray Irons

1st Step – Select the Insert Geometry

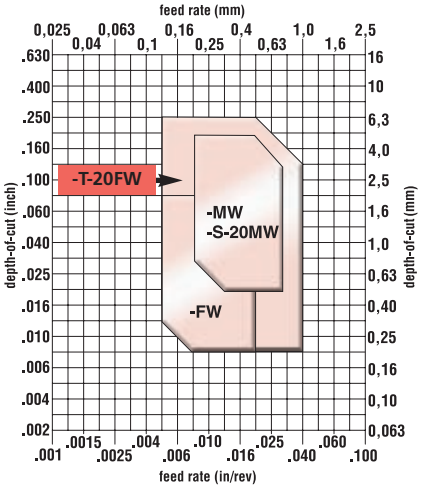
Negative Wiper Inserts

Medium Wiper

-MW -MW -S-20MW

Finishing Wiper

-FW -FW -T-20FW -FW -T-20FW



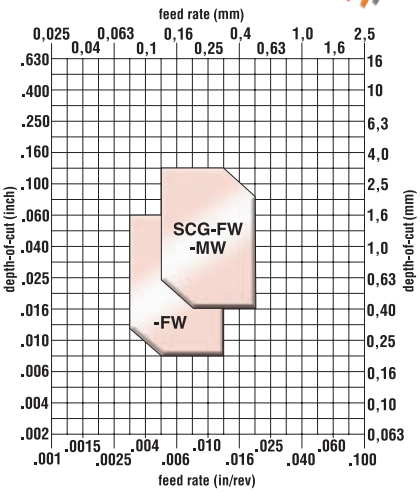
Positive Wiper Inserts

Medium Wiper

-MW

Finishing Wiper

-FW SCG-FW



2nd Step – Select the Grade

Gray Iron		Negative Insert Geometry				Positive Insert Geometry		
Cutting Condition		**-FW**	**-T-20FW**	**-MW**	**-S-20MW**	**-FW**	**SCG-FW**	**-MW**
heavily interrupted cut		–	KY3500	–	KB9640	–	KY3500	–
lightly interrupted cut		KC9315	KY3500	KC9325	KB9640	KC9315	KY3500	KC9315
varying depth of cut, casting or forging skin		KT315	KY1310	KC9315	KB9640	KC9315	KY1310	KC9315
smooth cut, pre-turned surface		KT315	KY1310	KC9315	KB9640	KT315	KY1310	KT315

Ductile Iron		Negative Insert Geometry			Positive Insert Geometry		
Cutting Condition		**-FW**	**-T-20FW**	**-MW**	**-FW**	**SCG-FW**	**-MW**
heavily interrupted cut		–	–	–	–	–	–
lightly interrupted cut		KC9315	KY3500	KC9315	KC9315	KY3500	KC9315
varying depth of cut, casting or forging skin		KT315	KY3400	KC9315	KC9315	KY3400	KC9315
smooth cut, pre-turned surface		KT315	KY3400	KC9315	KT315	KY3400	KT315

3rd Step – Select the Cutting Speed

Gray Cast Iron
ASTM A48: class 20, 25, 30, 35, 40, 45, 50, 55, 60 **SAE J431:** grade G1800, G3000, G3500, G4000

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 200 (60)	600 (180)	1000 (305)	1400 (430)	1800 (550)	2200 (675)	2600 (800)	3000 (920)	3400 (1040)	3800 (1160)	Starting Conditions ◁▷ sfm	m/min
K 1	KT315			◁▷								900	275
	KC9315			◁▷								900	275
	KC9325			◁▷								900	275
	KB9640							◁▷				2500	760
	KY1310							◁▷				2500	760
	KY3500							◁▷				2500	760

Ductile, Compacted Graphite & Malleable Cast Irons (<80 KSI tensile strength)
ASTM: A536; 60-40-18, 65-45-12, 80-55-06 **SAE J434:** D4018, D4512, D5506 **ASTM A47:** grade 32510, 35018
SAE J158: grade M3210, M4504, M5003, M5503, M7002 **ASTM: A842;** grade 250, 300, 350, 400, 450

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 400 (120)	650 (200)	900 (275)	1150 (350)	1400 (430)	1650 (505)	1900 (580)	Starting Conditions ◁▷ sfm	m/min
K 2	KT315			◁▷					900	275
	KC9315			◁▷					850	260
	KY3400					◁▷			1400	430
	KY3400				◁▷				1200	365

Ductile, Malleable & Austempered Cast Irons (>80 KSI tensile strength)
ASTM: A536; 100-70-03, 120-90-02 **SAE J434:** D7003 **SAE J158:** grade M8501 **ASTM: A897;** 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 400 (120)	650 (200)	900 (275)	1150 (350)	1400 (430)	1650 (505)	1900 (580)	Starting Conditions ◁▷ sfm	m/min
K 3	KT315		◁▷						750	230
	KC9315		◁▷						700	215
	KY3400				◁▷				1200	365
	KY3500				◁▷				1100	335

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

KENNA PERFECT – Cast Iron

Ductile and Gray Irons

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

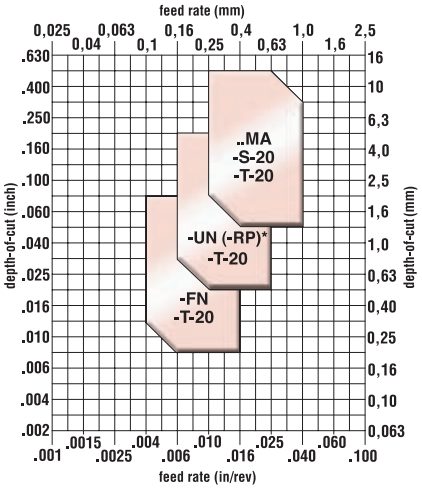
..MA -S-20 | -T-20 | -S-20

▼▼ Medium Machining

-UN | -T-20 | -RP

▼▼▼ Finishing

-FN | -T-20



Positive Inserts

▼▼ Medium Machining

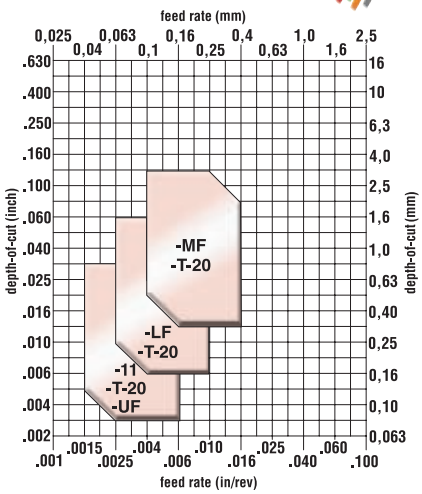
-MF | -T-20

▼▼▼ Finishing

-LF | -T-20

▼▼▼▼ Fine Finishing

-11 Cermet | -UF | -T-20



* geometry can be used in medium machining operations to reduce tool pressure in high-strength metals.

2nd Step – Select the Grade

Gray Iron

Cutting Condition		Negative Insert Geometry							Positive Insert Geometry				
		-T-20 ▼▼▼	-FN ▼▼▼	-T-20 ▼▼	-UN(-RP) ▼▼	-T-20 ▼	..MA ▼	-S-20 ▼	-T-20 ▼▼▼▼	-T-20 ▼▼▼	-LF ▼▼▼	-T-20 ▼▼	-MF ▼▼
heavily interrupted cut		–	KC9315	KY3500	KC9325	KY3500	KC9325	KB9640	–	KY3500	KC9325	KY3500	KC9325
lightly interrupted cut		–	KC9315	KY3500	KC9325	KY3500	KC9325	KB9640	–	KY3500	KC9325	KY3500	KC9325
varying depth of cut, casting or forging skin		KY1310	KT315	KY1310	KC9325	KY3500	KC9325	KB9640	KY1310	KY1310	KC9325	KY3500	KC9325
smooth cut, pre-turned surface		KY1310	KT315	KY1310	KC9315	KY1310	KC9315	KB9640	KY1310	KY1310	KC9315	KY1310	KC9325

Ductile Iron

Cutting Condition		Negative Insert Geometry						Positive Insert Geometry					
		-T-20 ▼▼▼	-FN ▼▼▼	-T-20 ▼▼	-UN(-RP) ▼▼	-T-20 ▼	..MA ▼	-T-20 ▼▼▼▼	-11/-UF ▼▼▼▼	-T-20 ▼▼▼	-LF ▼▼▼	-T-20 ▼▼	-MF ▼▼
heavily interrupted cut		–	KC9315	KY3500	KC9325	KY3500	KC9325	–	–	KY3500	KC9325	KY3500	KC9325
lightly interrupted cut		–	KC9315	KY3400	KC9315	KY3400	KC9315	–	KC5010	KY3400	KC9315	KY3400	KC9315
varying depth of cut, casting or forging skin		KY3400	KT315	KY3400	KC9315	KY3400	KC9315	KY3400	KT315	KY3400	KC5010	KY3400	KC9315
smooth cut, pre-turned surface		KY3400	KT315	KY3400	KC9315	KY3400	KC9315	KY3400	KT315	KY3400	KT315	KY3400	KC9315

3rd Step – Select the Cutting Speed

Gray Cast Iron
ASTM A48: class 20, 25, 30, 35, 40, 45, 50, 55, 60 **SAE J431:** grade G1800, G3000, G3500, G4000

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 200 (60)	600 (180)	1000 (305)	1400 (430)	1800 (550)	2200 (675)	2600 (800)	3000 (920)	3400 (1040)	3800 (1160)	Starting Conditions ◁▷ sfm	m/min
K 1	KT315			◁▷								900	275
	KC9315			◁▷								900	275
	KC9325			◁▷								900	275
	KB9640							◁▷				2500	760
	KY1310							◁▷				2500	760
	KY3500							◁▷				2500	760

Ductile, Compacted Graphite & Malleable Cast Irons (< 80 KSI tensile strength)
ASTM: A536; 60-40-18, 65-45-12, 80-55-06 **SAE J434:** D4018, D4512, D5506 **ASTM A47:** grade 32510, 35018
SAE J158: grade M3210, M4504, M5003, M5503, M7002 **ASTM:** A842; grade 250, 300, 350, 400, 450

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 300 (90)	450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	1350 (410)	1500 (460)	1650 (500)	1800 (550)	1950 (600)	Starting Conditions ◁▷ sfm	m/min
K 2	KT315					◁▷								900	275
	KC5010					◁▷								650	200
	KC9315					◁▷								850	260
	KC9325					◁▷								850	260
	KY3400								◁▷					1400	430
	KY3500							◁▷						1200	365

Ductile, Malleable & Austempered Cast Irons (> 80 KSI tensile strength)
ASTM: A536; 100-70-03, 120-90-02 **SAE J434:** D7003 **SAE J158:** grade M8501 **ASTM: A897;** 125-80-10, 150-100-7, 175-125-4, 200-150-1, 230-185

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 300 (90)	450 (135)	600 (180)	750 (225)	900 (275)	1050 (320)	1200 (360)	1350 (410)	1500 (460)	1650 (500)	1800 (550)	1950 (600)	Starting Conditions ◁▷ sfm	m/min
K 3	KT315				◁▷									750	230
	KC5010				◁▷									500	150
	KC9315				◁▷									700	215
	KC9325				◁▷									700	215
	KY3400							◁▷						1200	365
	KY3500						◁▷							1100	335

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

KENNA PERFECT – Non-Ferrous Metals

Aluminum Alloys

1st Step – Select the Insert Geometry

Negative Inserts

▼▼ Medium Machining

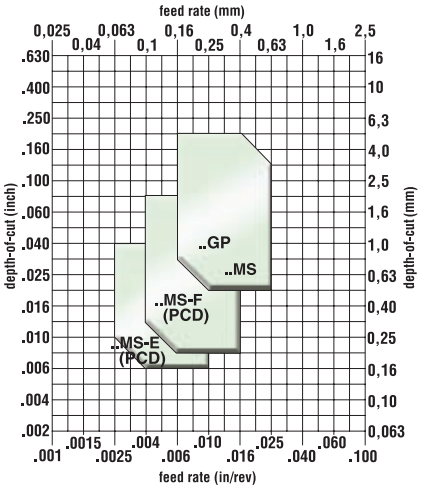
..GP ..MS

▼▼▼ Finishing

..MS-F (PCD)

▼▼▼▼ Fine Finishing

..MS-E (PCD)



Positive Inserts

▼▼ Medium Machining

..GT-HP

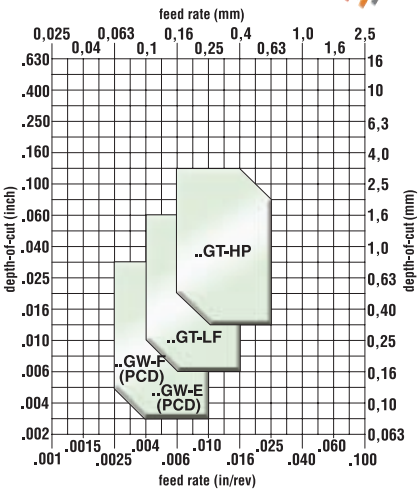
▼▼▼ Finishing

..GT-LF

▼▼▼▼ Fine Finishing

..GW-F (PCD)

..GW-E (PCD)



2nd Step – Select the Grade

		Negative Insert Geometry				Positive Insert Geometry			
Cutting Condition		..MS-E (PCD) ▼▼▼▼	..MS-F (PCD) ▼▼▼	..GP ▼▼	..MS ▼▼	..GW-E (PCD) ▼▼▼▼	..GW-F (PCD) ▼▼▼▼	..GT-LF ▼▼▼	..GT-HP ▼▼
heavily interrupted cut		–	KD100	KC5410	KC5410	–	KD100	–	KC5410
lightly interrupted cut		KD1405	KD100	KC5410	KC5410	KD1405	KD100	KC5410	KC5410
varying depth of cut, casting or forging skin		KD1405	KD100	KC5410	KC5410	KD1405	KD100	KC5410	KC5410
smooth cut, pre-turned surface		KD1405	KD100	KC5410	KC5410	KD1405	KD100	KC5410	KC5410

3rd Step – Select the Cutting Speed

low-silicon aluminum alloys (hypoeutectic < 12.2% Si) and magnesium alloys

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250)	1600 (500)	2400 (750)	3200 (1000)	4000 (1250)	4800 (1500)	5600 (1750)	6400 (2000)	7200 (2250)	8000 (2500)	Starting Conditions sfm	m/min
N 1	KC5410		◁▷									1800	550
	KD100			◁▷								2500	765

high-silicon aluminum alloys (hypereutectic > 12.2% Si) and magnesium alloys

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250)	1600 (500)	2400 (750)	3200 (1000)	Starting Conditions sfm	m/min
N 2	KD100		◁▷			1700	520
	KD1405			◁▷		2000	520

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Additional Cutting Speed Recommendations for Miscellaneous Workpiece Materials

copper, brass, zinc-based on a machinability index range of 70 - 100

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 3	KD100/KD1405		1700	520
	KC5010		900	275
	K313		850	260

nylon, plastics, rubbers, phenolics, resins, fiberglass, and glass

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 4	KD100/KD1405		1300	400
	KC5010		550	170

carbon and graphite composites: brush alloys, Kevlar, graphite 280 - 400 HB (30 - 43 HRC)

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 5	KD100/KD1405		2500	760
	KC5010		650	200

MMC's (aluminum-based Metal Matrix Composites)

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 6	KD1405		1500	460
	KD100		1200	365

TiN alloys, cast: ASTM 823, alloys 1, 2, 3, 11

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 7	KC5010		700	215
	K313		600	180

depleted uranium

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250) / 1600 (500) / 2400 (750) / 3200 (1000)	Starting Conditions sfm	Starting Conditions m/min
N 8	KC5010		700	215
	K313		600	180

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

KENNA PERFECT – High-Temp Alloys

Iron-Based, Cobalt-Based, and Nickel-Based, and Titanium Alloys

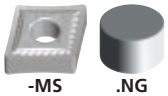
1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

-RP

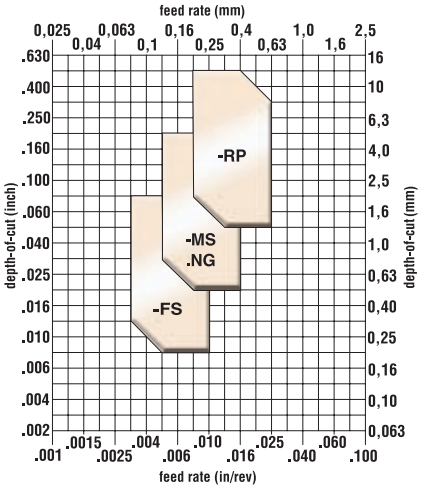
▼▼ Medium Machining



-MS .NG

▼▼▼ Finishing

-FS



Positive Inserts

▼▼ Medium Machining

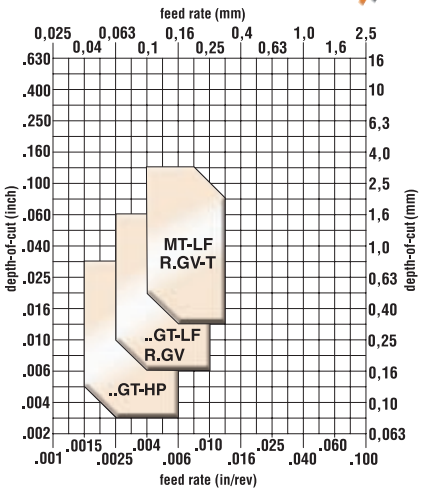
MT-LF R.GV-T

▼▼▼ Finishing

..GT-LF R.GV

▼▼▼▼ Fine Finishing

..GT-HP



2nd Step – Select the Grade

		Negative Insert Geometry				Positive Insert Geometry				
Cutting Condition		-FS ▼▼▼	.NG ▼▼	-MS ▼▼	-RP ▼	..GT-HP ▼▼▼▼	R.GV ▼▼▼	..GT-LF ▼▼▼	R.GV-T ▼▼	MT-LF ▼▼
heavily interrupted cut		KC5525	–	KC5525	KC9245	–	–	KC5025	–	KC5025
lightly interrupted cut		KC5510	KY1540	KC5525	KC5525	KC5025	KY1540	KC5025	KY1540	KC5025
varying depth of cut, casting or forging skin		KC5510	KY1540/ KY1525*	KC5510	KC5525	KC5010	KY1540/ KY1525*	KC5010	KY1540/ KY1525*	KC5010
smooth cut, pre-turned surface		KC5510/ K313	KY1525/* KY2100	KC5510/ K313	KC5510	KC5010/ K313	KY1525/* KY2100	KC5010/ K313	KY1525/* KY2100	KC5010

*Grade KY1525 available Spring 2005.

3rd Step – Select the Cutting Speed

Iron-Based, Heat-Resistant Alloys (135 - 320 HB) (≤ 34 HRC)
Wrought: A-286, Discaloy, Incoloy 801, N-155, 16-25-6, 19-9 DL **Cast:** ASTM A297, A351, A608, A567

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15) 150 (45) 250 (75) 350 (105) 450 (140) 550 (170) 650 (200) 750 (230) 850 (260) 950 (290) 1050 (350) 1150 (350) 1250 (380)	Starting Conditions sfm	Starting Conditions m/min
S 1	K313		100	30
	KC5510/KC5010		180	55
	KC5525/KC5025		125	40
	KC9245		100	30
	KY1525*		650	200
	KY1540		550	170
	KY2100		600	185

Cobalt-Based, Heat-Resistant Alloys (150 - 425 HB) (≤ 45 HRC)
Wrought: AiResist 213, Haynes 25 (L605), Haynes 188, J-1570, Stellite **Cast:** AiResist 13, Haynes 21, MAR-M302, MAR-M509, NASA Co-W-Re, WI-52

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15) 150 (45) 250 (75) 350 (105) 450 (140) 550 (170) 650 (200) 750 (230) 850 (260) 950 (290) 1050 (350) 1150 (350) 1250 (380)	Starting Conditions sfm	Starting Conditions m/min
S 2	K313		110	35
	KC5510/KC5010		195	60
	KC5525/KC5025		100	30
	KC9245		110	35
	KY1525*		720	220
	KY1540		600	185
	KY2100		650	200

Nickel-Based, Heat-Resistant Alloys (140 - 475 HB) (≤ 48 HRC)
Astroloy, Hastelloy B/C/C-276/X, Inconel 601/617/625/700/706/718, IN102, Incoloy 901, MAR-M200, Nimonic, Rene 41, Udimet, Waspaloy, Monel

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15) 150 (45) 250 (75) 350 (105) 450 (140) 550 (170) 650 (200) 750 (230) 850 (260) 950 (290) 1050 (350) 1150 (350) 1250 (380)	Starting Conditions sfm	Starting Conditions m/min
S 3	K313		125	40
	KC5510/KC5010		225	70
	KC5525/KC5025		125	40
	KC9245		125	40
	KY1525*		820	250
	KY1540		700	215
	KY2100		750	230

Titanium and Titanium Alloys (110 - 450 HB) (≤ 48 HRC)
Pure: Ti98.8, Ti99.9 **Alloyed:** Ti-5Al-2.5Sn, Ti-6Al-4V, Ti-6Al-2Sn-4Zr-2Mo, Ti-3Al-8V-6Cr-4Mo-4Zr, Ti-10V-2Fe-3Al, Ti-13V-11Cr-3Al

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15) 150 (45) 250 (75) 350 (105) 450 (140) 550 (170) 650 (200) 750 (230) 850 (260) 950 (290) 1050 (350) 1150 (350) 1250 (380)	Starting Conditions sfm	Starting Conditions m/min
S 4	K313		150	45
	KC5510/KC5010		225	70
	KC5525/KC5025		175	55

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

*Grade KY1525 available Spring 2005.

Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

KENNA PERFECT – Hardened Materials

Hardened Steels and Irons 450 - 750 HB (48 - 65 HRC)

1st Step – Select the Insert Geometry

WIPER technology

KENNA PERFECT

Negative Wiper Inserts

Medium Wiper

-S-20MWMT (multi-tipped)

Finishing Wiper

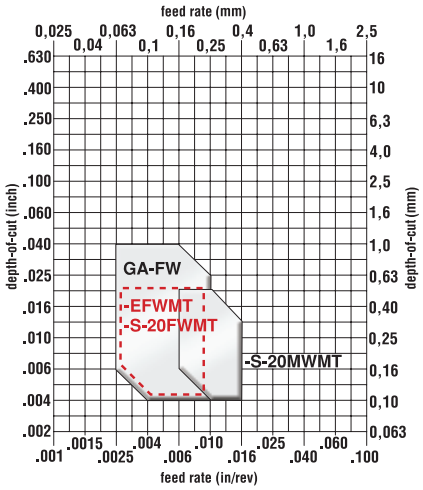
-EFWMT (multi-tipped)

Finishing Wiper

-S-20FWMT (multi-tipped)

Finishing Wiper

GA-FW



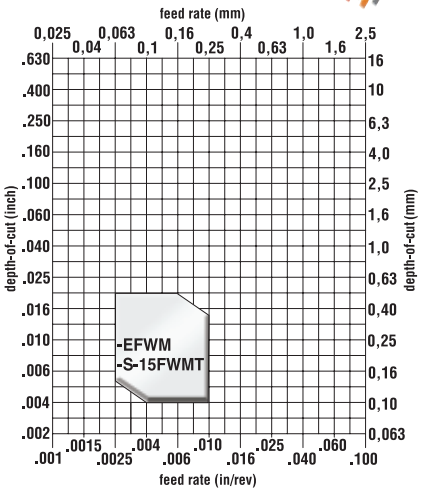
Positive Wiper Inserts

Finishing Wiper

-EFWM

Fine Finishing Wiper

-S-15FWMT (multi-tipped)



2nd Step – Select the Grade

		Negative Insert Geometry				Positive Insert Geometry	
Cutting Condition		**GA-FW**	**-S-20FWMT**	**-EFWMT**	**-S-20MWMT**	**-S-15FWMT**	**-EFWM**
heavily interrupted cut		–	–	KB5625	–	–	–
lightly interrupted cut		–	KB9610	KB5625	KB9610	KB9610	KB5625
varying depth of cut, casting or forging skin		KY4400	KB9610	KB9610	KB9610	KB9610	KB5625
smooth cut, pre-turned surface		KY4400	KB9610	KB9610	KB9610	KB9610	KB5625

1st Step – Select the Insert Geometry

KENNA PERFECT

Negative Inserts

▼▼ Medium Machining

-S-20

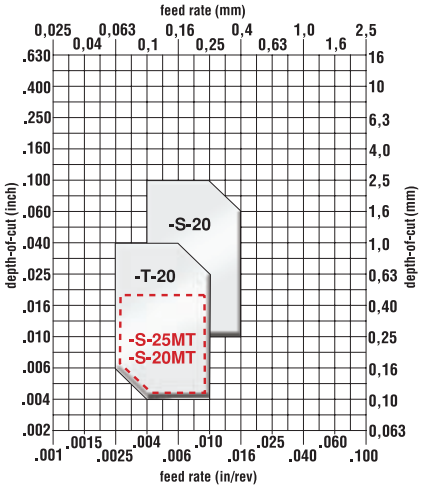
▼▼▼ Finishing

-S-25MT (multi-tipped)

▼▼▼▼ Fine Finishing

-T-20

-S-20MT (multi-tipped)



Positive Inserts

▼▼ Medium Machining

-T-15

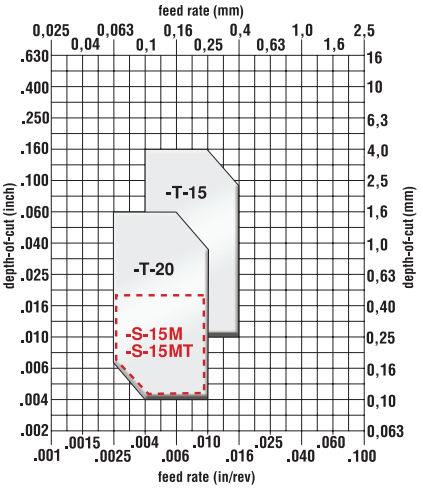
▼▼▼ Finishing

-S-15M

▼▼▼▼ Fine Finishing

-T-20

-S-15MT (multi-tipped)



2nd Step – Select the Grade

		Negative Insert Geometry				Positive Insert Geometry			
Cutting Condition		**S-20MT ▼▼▼▼**	**-T-20 ▼▼▼▼**	**-S-25MT ▼▼▼**	**-S-20 ▼▼**	**-S-15MT ▼▼▼▼**	**-T-20 ▼▼▼▼**	**-S-15M ▼▼▼**	**-T-15 ▼▼**
heavily interrupted cut		–	–	KB5625	KB9640	–	–	KB5625	–
lightly interrupted cut		KB9610	–	KB5625	KB9640	KB9610	KY4400	KB5625	KY1615
varying depth of cut, casting or forging skin		KB9610	KY4400	KB5625	KY1615	KB9610	KY4400	KB5625	KY1615
smooth cut, pre-turned surface		KB9610	KY4400	KB5625	KY1615	KB9610	KY4400	KB5625	KY1615

3rd Step – Select the Cutting Speed

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15) / 150 (45) / 250 (75) / 350 (110) / 450 (140) / 550 (170) / 650 (200) / 750 (230) / 850 (260)	Starting Conditions ◁▷ sfm	Starting Conditions ◁▷ m/min
H 1	KY4400		450	135
	KY1615		325	100
	KB9610		550	170
	KB5625		400	120
	KB9640		350	105

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

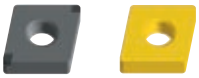
Need help in selecting a product?
Call Customer Application Support at 800/835-3668.

Negative Wiper Inserts – Application Technology

Surface Finish

Carbide and Ceramic Inserts

Solid and Tipped CBN Inserts



Theoretical Surface Finish – R_a
µ in. (µ m)

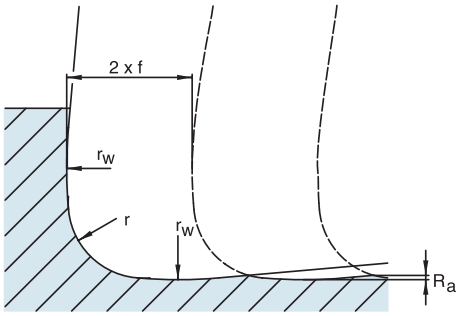
insert	feed rate – ipr (mm/rev)										
FW, MW, & RW IC	.008 (0,2)	.012 (0,3)	.016 (0,4)	.020 (0,5)	.024 (0,6)	.028 (0,7)	.032 (0,8)	.036 (0,9)	.040 (1)	.044 (1,1)	.048 (1,2)
3/8" (9,53 mm)	14 (0,3)	30 (0,75)	50 (1,3)	80 (2)	—	—	—	—	—	—	—
1/2" (12,7 mm)	—	23 (0,6)	41 (1)	63 (1,6)	91 (2,2)	120 (3)	160 (4)	200 (5)	250 (6,2)	—	—
3/4" + 1" (19,05 mm) (25,4 mm)	—	—	—	—	103 (2,6)	141 (3,5)	184 (4,6)	232 (5,8)	287 (7,2)	347 (8,7)	413 (10,3)

Theoretical Surface Finish – R_a
µ in. (µ m)

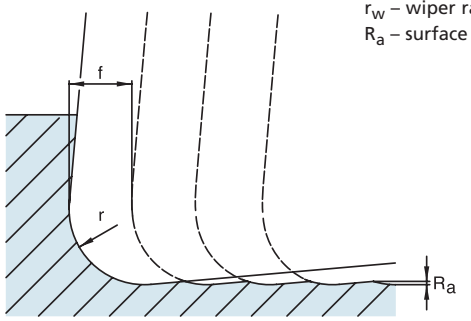
insert	feed rate – ipr (mm/rev)				
Insert Size and Type IC	.004 (0,1)	.006 (0,15)	.008 (0,2)	.012 (0,3)	.016 (0,4)
FW 1/2" (12,7 mm)	3 (0,06)	6 (0,14)	10 (0,26)	23 (0,6)	41 (1,0)
MW 1/2" (12,7 mm)	2 (0,05)	4 (0,11)	7 (0,19)	17 (0,42)	29 (0,75)

How It Works

Wiper Insert



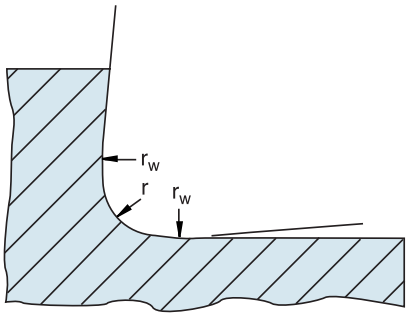
Standard Insert



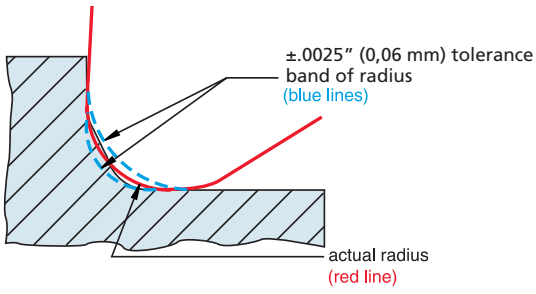
LEGEND
f – feed
r – corner radius
r_w – wiper radius
R_a – surface finish

Corner Radius Configuration

CNMG and WNMG wiper inserts create a true corner radius on the workpiece, just as a standard insert does.

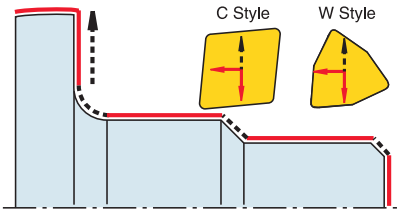


DNMG and TNMG wiper inserts do not provide an exact corner radius on the workpiece. The radius produced falls within a ±.0025" (0,06 mm) tolerance band. (blue lines)

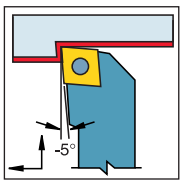


C- and W-Style Inserts

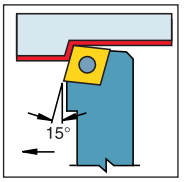
surface with wiper effect
surface with standard insert edge



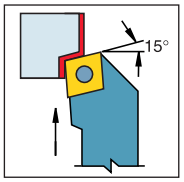
KENLOC Toolholders



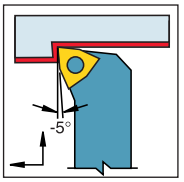
CN . . 80° corner insert
requires MCLN 5° reverse lead angle toolholder



CN . . 100° corner insert
requires MCRN 15° lead angle toolholder



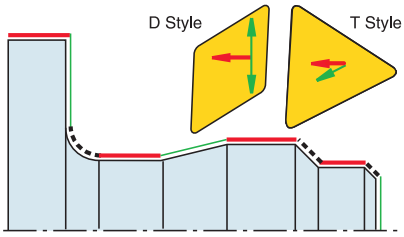
CN . . 100° corner
insert requires MCKN 15° lead angle toolholder



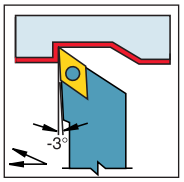
WN . . 80° corner insert
requires MWLN 5° reverse lead angle toolholder

D- and T-Style Inserts

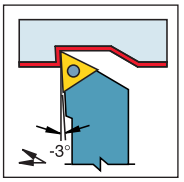
surface finish with wiper effect
surface with designated insert nose radius
surface finish with .016" (0,41 mm) radius



KENLOC Toolholders



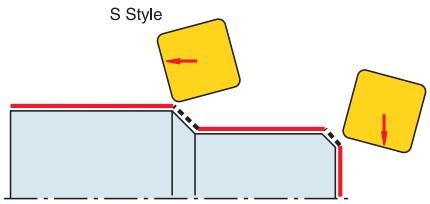
DN . . 55° corner insert
requires MDJN 3° reverse lead angle toolholder



TN . . 60° corner insert
requires MTJN 3° reverse lead angle toolholder

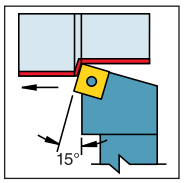
S-Style Inserts

surface with wiper effect
surface with standard insert edge

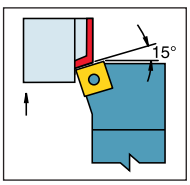


NOTE: The holder guidelines above also apply to ceramic/PCBN wiper inserts in similar insert shapes; i.e.: CNGA, CNGX, DNGA, etc.

KENLOC Toolholders



SN . . 90° corner insert
requires MSRN 15° lead angle toolholder



SN . . 90° corner insert
requires MSKN 15° lead angle toolholder

Positive Wiper Inserts – Application Technology

Surface Finish

Carbide and Ceramic Inserts

Tipped CBN Inserts

Theoretical Surface Finish – R_a
µ in. (µ m)

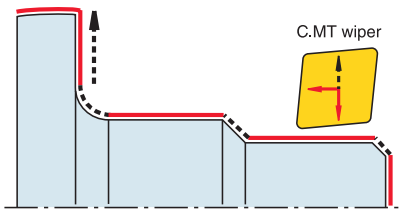
insert	feed rate – ipr (mm/rev)									
FW, MW IC	.002 (0,05)	.004 (0,10)	.006 (0,15)	.008 (0,20)	.010 (0,25)	.012 (0,30)	.014 (0,35)	.016 (0,40)	.018 (0,45)	.020 (0,50)
1/4" (6,35 mm)	1 (0,03)	6 (0,15)	14 (0,35)	22 (0,55)	35 (0,90)	49 (1,25)	—	—	—	—
3/8" (9,53 mm)	1 (0,02)	4 (0,10)	8 (0,20)	14 (0,35)	22 (0,55)	30 (0,75)	39 (1,00)	—	—	—
1/2" (12,7 mm)	1 (0,02)	2 (0,06)	6 (0,15)	10 (0,25)	16 (0,40)	24 (0,60)	31 (0,80)	39 (1,00)	51 (1,30)	63 (1,60)

Theoretical Surface Finish – R_a
µ in. (µ m)

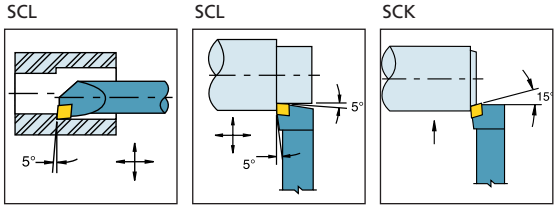
insert	feed rate – ipr (mm/rev)			
Insert Size and Type IC	.004 (0,10)	.006 (0,15)	.008 (0,20)	.012 (0,30)
FW 1/4" (6,35 mm)	6 (0,14)	13 (0,32)	22 (0,58)	—
MW 3/8" (9,53 mm)	4 (0,11)	9 (0,24)	17 (0,43)	38 (0,97)

CCMT and CPMT Inserts

— surface with wiper effect
– – – surface with designated insert nose radius



SCREW-ON Toolholders and Boring Bars

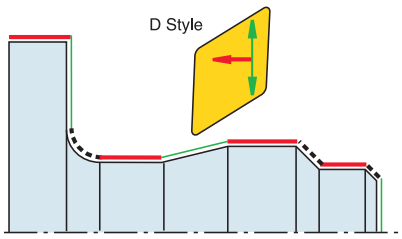


C.MT 80° inserts require 5° reverse lead SCL toolholders.

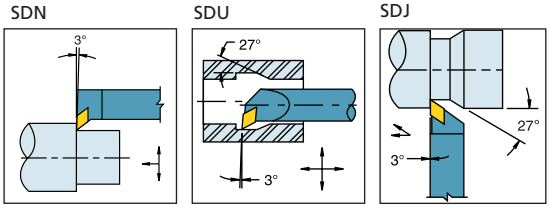
C.MT 100° inserts require 15° lead SCK toolholders.

DCMT- and DPMT-Style Inserts

— surface finish with wiper effect
– – – surface with designated insert nose radius
— surface finish with .016" (0,41mm) radius



SCREW-ON Toolholders and Boring Bars



D.MT 55° inserts require a 3° reverse lead angle and can be used in SDN, SDU, and SDJ style toolholders and boring bars.

Engineering Your Competitive Edge®

KENNAMETAL®

Wiper Technology –

Improve your turning operations!

WIPER technology

Conventional Turning Insert		
doc	0.050"	(1,25 mm)
feed	**0.012 ipr**	**(0,3 mm)**
speed	1,100 sfm	(335 m/min)
finish	**160 R_a µin.**	**(4,0 µm)**

Kennametal Wiper Technology –MW

doc .....0.050"..... (1,25 mm)

feed.....**0.020 ipr..... (0,5 mm)**

speed ..1,100 sfm ..... (335 m/min)

finish....**60 R_a µin..... (1,6 µm)**

Engineering Your Competitive Edge®

KENNAMETAL®

The only universal products ...

KENNA UNIVERSAL

Program Content

- **KENLOC** Inserts
- **SCREW-ON** Inserts
- **TOP NOTCH** Grooving with Chip Control
- **LT** Threading Inserts with Chip Control
- **A4** Groove & Turn Inserts
- **A2** Cut-Off Inserts

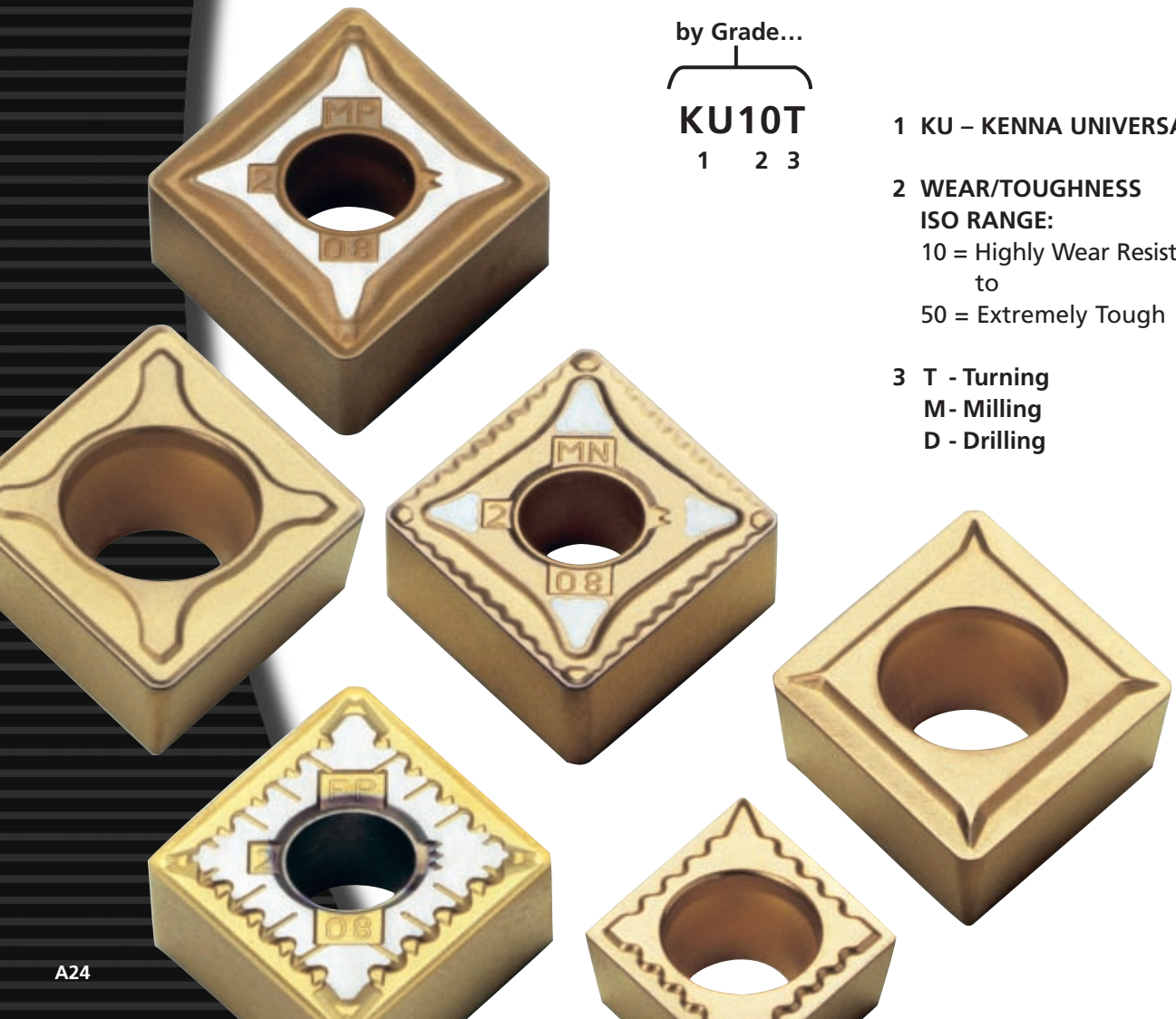
by Grade...

KU10T
1 2 3

1 KU – KENNA UNIVERSAL Grade

2 WEAR/TOUGHNESS
ISO RANGE:
10 = Highly Wear Resistant
to
50 = Extremely Tough

3 T - Turning
M - Milling
D - Drilling



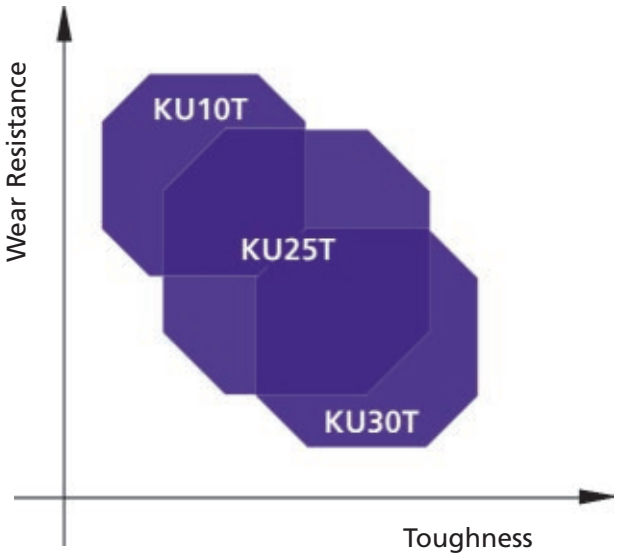
KENNAMETAL®

... engineered to meet the specific needs of job shops!

KENNA UNIVERSAL

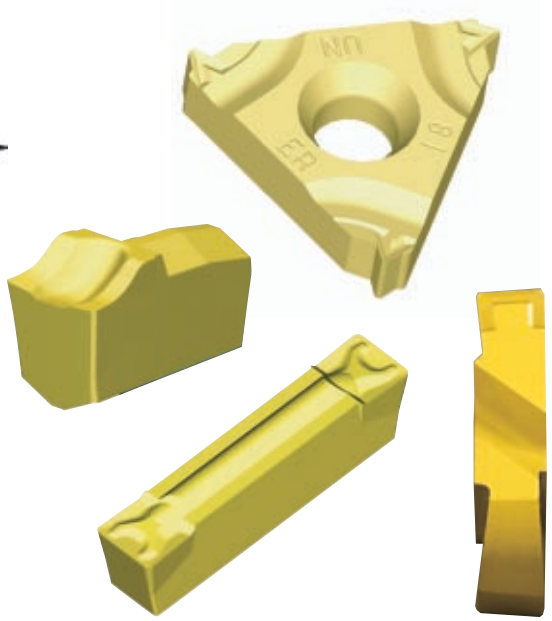
Universal Turning Grades

KU10T – PVD-coated grade for finishing and medium machining operations
KU25T – Tough PVD-coated grade for finishing and medium machining in threading and cut-off operations
KU30T – CVD-coated grade for roughing and medium machining operations



Apply on:

UNIVERSAL	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-Ferrous
	S	High-Temp Alloys
	H	Hardened Material



KENNA UNIVERSAL

Geometries for Steel, Stainless Steel, Cast Iron, Non-Ferrous, High-Temp Alloys, and Hardened Materials

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

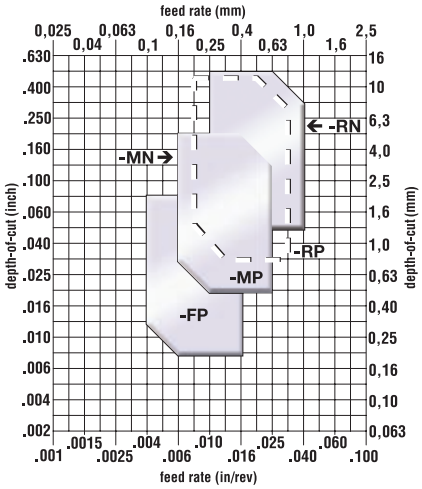
-RN -RP

▼▼ Medium Machining

-MN -MP

▼▼▼ Finishing

-FP



Positive Inserts

▼▼ Medium Machining

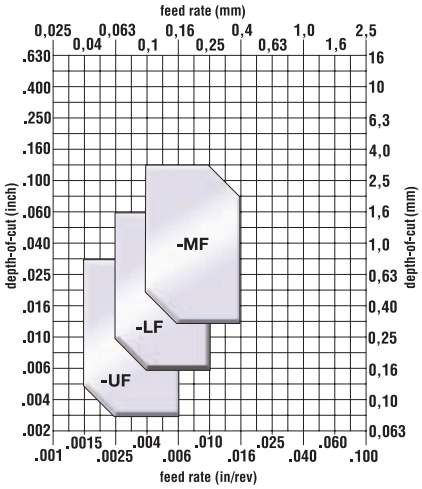
-MF

▼▼▼ Finishing

-LF

▼▼▼▼ Fine Finishing

-UF



2nd Step – Select the Grade

		Negative Insert Geometry					Positive Insert Geometry		
Cutting Condition		-FP ▼▼▼	-MP ▼▼	-MN ▼▼	-RN ▼	-RP ▼	-UF ▼▼▼▼	-LF ▼▼▼	-MF ▼▼
heavily interrupted cut		–	KU30T	KU30T	KU30T	KU30T	–	KU30T	KU30T
lightly interrupted cut		KU10T	KU30T	KU30T	KU30T	KU30T	KU10T	KU30T	KU30T
varying depth of cut, casting or forging skin		KU10T	KU10T	KU30T	KU30T	KU30T	KU10T	KU10T	KU30T
smooth cut, pre-turned surface		KU10T	KU10T	KU30T	KU30T	KU30T	KU10T	KU10T	KU30T

3rd Step – Select the Cutting Speed

Plain Carbon and Alloy Steels, Ferritic and Martensitic and PH Stainless Steels

Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	Starting Conditions ◁▷ sfm	m/min
P	KU10T				◁▷				650	200
	KU30T			◁▷					500	150

Austenitic and Stainless Steels

Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	Starting Conditions ◁▷ sfm	m/min
M	KU10T				◁▷				600	180
	KU30T			◁▷					450	140

Gray and Ductile Cast Irons

Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	Starting Conditions ◁▷ sfm	m/min
K	KU10T					◁▷			800	240
	KU30T				◁▷				650	200

Non-Ferrous Metals: Low-silicon aluminum alloys (<12%) and magnesium alloys

Material Group	grade	Speed - sfm (m/min) 800 (240)	1200 (360)	1600 (490)	2000 (610)	2400 (730)	2800 (855)	3200 (975)	Starting Conditions ◁▷ sfm	m/min
N	KU10T			◁▷					1500	460

High-Temp Alloys

Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	Starting Conditions ◁▷ sfm	m/min
S	KU10T		◁▷						220	65
	KU30T	◁▷							150	45

Hardened Materials (>48 HRC)

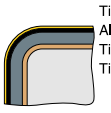
Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	Starting Conditions ◁▷ sfm	m/min
H	KU10T		◁▷						200	60

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

Kennametal Grade System for Cutting Materials

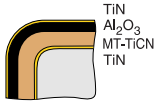
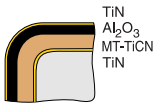
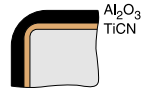
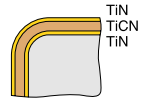
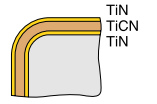
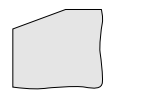
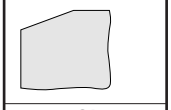
Grade Selection Table

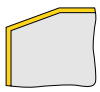
Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
Uncoated Carbide Grades	**K313**	C3 – C4	**composition:** A hard, low binder content, unalloyed WC/Co fine-grained grade. **application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, nonmetals, and most high-temperature alloys. Superior thermal deformation and depth of cut notch resistance. The grain structure is well controlled for minimal pits and flaws, which contributes to long, reliable service.	P M K N S H	
	K68	C3	**composition:** A hard, low binder content, unalloyed grade WC/Co fine-grained grade. **application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, nonmetals and as an alternative to the K313 grade on most high-temperature alloys. Use as a general purpose grade for non-ferrous materials.	P M K N S H	
PVD-Coated Carbide Grades	**KC5010** NEW! improved	TiAlN C3, C4	**composition:** An advanced PVD TiAlN coating over a very deformation-resistant unalloyed carbide substrate. KC5010's new and improved coating allows for speeds to be increased by 50 to 100%. **application:** The KC5010 grade is ideal for finishing to general machining of most workpiece materials at higher speeds. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials and super alloys under stable conditions. It also performs well machining hardened and short chipping materials.	P M K N S H	
	KC5025 NEW! improved	TiAlN C2, C6	**composition:** An advanced PVD TiAlN coated grade with a tough, ultra-fine grain unalloyed substrate. **application:** For general purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium, and will handle interruptions and high feed rates.	P M K N S H	
	KC5410	TiB_2 C3 – C4	**composition:** A PVD TiB2 coating over a very deformation-resistant unalloyed substrate. **application:** The KC5410 grade is designed for roughing, semifinishing and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys and magnesium alloys. The TiB2 coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow and outstanding wear resistance. In addition, built-up edge is prevented because this coating has a very low affinity for aluminum. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Molded inserts have a light hone.	P M K N S H	
	KC5510 NEW!	TiAlN C3 – C4	**composition:** An advanced PVD TiAlN coated fine-grained tungsten carbide grade. **application:** Grade KC5510 is specifically engineered for the productive machining of high-temperature alloys. The fine-grained tungsten carbide 6% cobalt substrate has excellent toughness and deformation resistance while the advanced PVD coating allows for metal cutting speeds double those of conventional PVD-coated cutting tools.	P M K N S H	
	KC5525 NEW!	TiAlN C2 – C6	**composition:** Advanced PVD TiAlN coated fine-grained high cobalt carbide grade. **application:** Grade KC5525 utilizes the same advanced PVD coating as grade KC5510 in conjunction with a fine-grained tungsten carbide 10% cobalt substrate. The higher cobalt provides for added security in interrupted cuts while the fine grained WC maintains hardness-resisting deformation at higher speeds. Designed for medium to heavy interruptions in high-temperature alloys.	P M K N S H	
	KU10T NEW!	TiN TiAlN C3, C4	**composition:** An advanced PVD coating over a highly deformation-resistant carbide substrate. **application:** KU10T is an ideal general machining grade designed for medium to finishing operations. KU10T is excellent when machining most steels, stainless steels, cast irons, non-ferrous materials, and superalloys under stable conditions. KU10T is also effective when machining hardened and short-chipping materials.	P M K N S H	

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance → Toughness (05 10 15 20 25 30 35 40 45)
PVD-Coated Carbide Grades	**KU25T** NEW!	C2, C6	**composition:** An advanced PVD coating over a tough and highly wear resistant carbide substrate. **application:** KU25T is ideal for finishing to general machining of most workpiece materials. With a higher cobalt content than KU10T, this grade provides the toughness needed to handle the demands of grooving, threading and cut-off operations. KU25T performs extremely well when machining most steels, stainless steels, cast irons, non-ferrous materials, and superalloys under stable conditions. KU25T can also be effectively applied when machining hardened and short-chipping materials.	P M K N S H	
CVD-Coated Carbide Grades	**KC8050**	C1 – C3, C5 – C7	**composition:** A newly developed, advanced cobalt-enriched carbide grade with a thick alumina coating. **application:** A versatile performer on a wide range of workpiece materials (steels, stainless steels, and cast irons) for roughing through finishing operations. This highly wear-resistant grade can operate with or without coolant at high speeds, and has exceptional edge strength for interrupted cuts. The micro-finished insert edge resists workpiece build-up and microchipping, and produces excellent surface finishes. For machining steels and cast irons, your first choices are the -RN and -MN geometries. For medium machining applications and finishing cuts, the -MP and -FP geometries with a positive rake are suggested.	P M K N S H	
	KC9040	 C5 – C6	**composition:** An alumina-coated grade with a tough cobalt-enriched substrate. **application:** For heavy roughing applications on all types of steels, stainless steels, and most other materials when tool edge strength is critical. A specially designed coating preparation assures prolonged tool life. Apply with confidence on tough jobs.	P M K N S H	
	KC9110	C3, C7	**composition:** A specially engineered, patent-pending cobalt-enriched carbide grade with thick K-MTCVD-TiCN coating layer, an Al_2O_3 layer of controlled grain size, and outer layers of TiCN and TiN for maximum wear resistance. **application:** An excellent finishing to medium machining grade for a variety of workpiece materials including most steels, ferritic and martensitic stainless steels, and cast irons. The specially engineered, cobalt-enriched substrate offers a balanced combination of deformation resistance and edge toughness, while the thick coating layers offer outstanding abrasion resistance and crater wear resistance for high-speed machining. The smooth coating provides good resistance to edge build-up and microchipping and produces excellent surface finishes. For rougher cutting, use the KC9125 grade.	P M K N S H	
	KC9125	C2 – C3, C6 – C7	**composition:** A tough cobalt-enriched carbide grade with a newly designed multi-layer K-MTCVD TiCN-Al_2O_3-TiCN-TiN coating with superior interlayer adhesion. **application:** This is the industry's best general-purpose turning grade for most steels, and ferritic and martensitic stainless steels. The substrate design, with cobalt-enrichment, assures adequate deformation resistance along with excellent bulk toughness and insert edge strength. The coating layers offer good wear resistance over a wide range of machining conditions. The smoothness of the coating leads to reduced frictional heat, minimizes microchipping, and improves workpiece surface finishes. The KC9125 grade performs well in moderately heavy roughing to semi-finishing cuts. Use the KC9110 grade for finishing cuts.	P M K N S H	
	KC9140 NEW!	C5 – C6	**composition:** A newly engineered, tough carbide grade with an advanced multi-layered TiN-MT-TiCN-Al_2O_3-TiN coating. **application:** For heavy roughing applications of alloy steels where insert edge strength is critical. A specially designed coating ensures excellent interlayer adhesion and long tool life.	P M K N S H	
	KC9225	C2 – C3	**composition:** A newly engineered, patent-pending, multi-layered K-MTCVD coated cobalt-enriched carbide grade. **application:** KC9225 grade has been specially designed for resisting depth-of-cut notching and minimizing burr formation often observed in the machining of austenitic stainless steels. Cobalt-enrichment provides an optimum combination of toughness and deformation resistance. This new grade's polished edge minimizes build-up and ensures superior workpiece finishes. KC9225 inserts are your first choice for machining stainless steels.	P M K N S H	

Kennametal Grade System for Cutting Materials

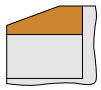
Grade Selection Table

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
CVD-Coated Carbide Grades	**KC9240** NEW! improved	 C1 – C2	**composition:** A multi-layered CVD coating comprised of TiN-MT-TiCN-Al_2O_3-TiN coating over a tough, non-enriched carbide substrate. **application:** This CVD coated grade is designed for tough applications at moderate speeds and feeds. KC9240 inserts offer an extraordinary combination of toughness, built-up edge resistance, and wear resistance in stainless steel applications. Excellent thermal/mechanical shock resistance makes KC9240 inserts ideally suited for even the most challenging stainless steel applications.	P M K N S H	
	KC9245	 C1 – C2	**composition:** A multi-layered K-MTCVD coating over a super-tough substrate. **application:** This K-MTCVD coated carbide grade is engineered to take on the most brutal cast stainless steel machining applications. Its substrate withstands heavy interruptions, while its polished surface resists build-up, even at slow cutting speeds. Additionally, its wear-resistant coating resists the micro-chipping common when machining austenitic stainless steel. KC9245 grade is also available in insert sizes and geometries appropriate for heavy feeds and large depths of cut.	P M K N S H	
	KC9315 NEW! improved	C3 – C4	**composition:** A multi-layered CVD coating with very thick K-MTCVD Al_2O_3 TiCN layers, for maximum wear resistance, is applied over a substrate specifically engineered for cutting cast and ductile irons. **application:** The KC9315 grade delivers longer tool life when high-speed machining of ductile and cast irons. The thick K-MTCVD TiCN coating ensures a tremendous tool life advantage, especially when cutting higher tensile strength ductile and cast irons where workpiece size consistency and reliability of tool life are critical. This new Kennametal grade is excellent when used for either straight or lightly interrupted cut applications. Moreover, if you're looking for high productivity performance, the KC9315 grade is an ideal choice.	P M K N S H	
	KC9325	 C2 – C3	**composition:** A TiCN and alumina-coated grade with a strong, reliable substrate. **application:** Grade development for the KC9325 grade focused on a variety of ductile and cast iron operations. The coating and substrate are optimized for flexibility. If you are machining different types of ductile or cast irons where application confidence, flexibility and broad range reliability are your primary requirements, the KC9325 grade is the perfect choice.	P M K N S H	
	KU30T NEW!	 C5 – C6	**composition:** A tough cobalt-enriched substrate with a multilayered CVD coating. **application:** KU30T is a new grade designed specifically for the job shop industry where a wide range of workpiece materials is employed. With its tough cobalt-enriched substrate, KU30T performs very effectively in roughing through finishing operations. The post-coat grinding of the insert permits stable insert seating while the post-coat treatment resists workpiece build-up and microchipping. For machining steels, cast irons, and stainless steels, your first choices are the –RN, -MN, and the –RP geometries. For medium machining and finishing, the –MP and –FP geometries with a positive rake are suggested.	P M K N S H	
PVD-Coated Cermet	**KT315**	 C3, C7	**composition:** A multi-layered, PVD TiN/TiCN/TiN, coated cermet turning grade. **application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications too. Provides long and consistent tool life and will produce excellent workpiece finishes.	P M K N S H	
Ceramics	**KY1310** NEW!	 –	**composition:** An advanced sialon ceramic grade. **application:** Grade KY1310 provides maximum wear resistance. Use it for high-speed continuous turning of gray cast iron, including through scale.	P M K N S H	
	KY1525 NEW!	 C4	**composition:** An advanced silicon carbide whisker reinforced aluminum oxynitride grade. **application:** Excellent combination of wear resistance, edge toughness, and thermal shock resistance for general purpose to finish machining of high-temperature alloys. Proven excellent depth-of-cut notch resistance as compared to whisker reinforced alumina-based ceramics.	P M K N S H	

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance → Toughness; 05 10 15 20 25 30 35 40 45
Ceramics	**KY1540** NEW!	C4	**composition:** KY1540 is the latest and most advanced sialon material ever developed. **application:** Combines excellent wear properties, fracture toughness, and thermal shock resistance for general purpose to finish machining of high-temperature alloys. Provides superior depth of cut notch resistance as compared to whisker ceramics.	P M K N S H	
	KY1615	C4, C8	**composition:** An advanced alumina/TiC ceramic grade (black). **application:** Great combination of toughness and wear resistance; used for machining alloy steels, tool steels and stainless steels to 60 HRC (653 HB). It is also applied in finish turning and boring of cast irons.	P M K N S H	
	KY2100	C4	**composition:** An advanced sialon grade. **application:** Good mechanical shock resistance combined with edge wear resistance; used for general purpose machining of high-temperature alloys.	P M K N S H	
	KY3400	C3	**composition:** CVD-coated pure silicon nitride grade. **application:** Excellent combination of toughness and edge wear resistance; used for general purpose machining of gray cast irons and ductile or nodular cast irons.	P M K N S H	
	KY3500	C2	**composition:** Pure silicon nitride grade. **application:** Maximum toughness; used at high feed rates for rough machining of gray cast iron, including machining through interruptions.	P M K N S H	
	KY4400	 C4, C8	**composition:** A PVD TiN coating over an aluminum oxide and titanium carbonitride ceramic (Al_2O_3/TiCN). **application:** Used for finish turning of hardened steels and irons (greater than 45 HRC). Where possible, use under dry conditions in smooth or varied depth of cuts. Can also be applied in finish turning of nickel alloys, cobalt alloys, and powder metals.	P M K N S H	
PCBN – Polycrystalline Cubic Boron Nitride	**KB5625**	C4, C8	**composition:** A PVD TiAlN coating over a low content, PCBN tip brazed onto a carbide insert. **application:** Designed for roughing to finishing of hardened steels (>45 HRC). Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case hardened steels, carburized and nitrided irons, and some hard coatings.	P M K N S H	
	KB9610 NEW!	C4, C8	**composition:** A low content PCBN grade with a TiN/Al_2O_3/TiCN CVD coating for protection against harmful crater wear. **application:** KB9610 is designed for the precision machining of hardened steels (>48 HRC), the harder the steel the better. KB9610 is very effectively applied on bearing steels, hot and cold work tool steels, high-speed steels, die steels, case hardened steels, carburized and nitrided irons, and some hard coatings. Do not use on soft steels. For best results, apply negative rake tools in OD applications and positive tools in ID applications. KB9610 is available in a multi-tip format with a tremendous breadth of edge preps and two styles of wiper geometries.	P M K N S H	
	KB9640 NEW!	C1	**composition:** A high CBN content, solid PCBN structure having multiple cutting edges and a CVD alumina coating. **application:** KB9640 grade is applied in the roughing to semi-finishing of fully pearlitic gray cast iron, chilled irons, high chrome alloy steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finished chilled cast iron and fully pearlitic cast iron. Do not apply on finishing hardened steels. The solid KB9640 also can be effectively applied when roughing hardened steels.	P M K N S H	

Kennametal Grade System for Cutting Materials

Grade Selection Table

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
PCBN – Polycrystalline Cubic Boron Nitride	KD120	 C8	**composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **application:** The primary application area for high CBN content grades is in roughing to finishing of fully pearlitic gray cast iron, chilled irons, high chrome alloys steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. Do not apply on finishing cuts in hardened steels. Available in regular size tips.	P M K N S H	
PCD - Polycrystalline Diamond	KD100	C4	**composition:** A polycrystalline diamond tip (PCD) brazed onto a carbide substrate. **application:** The KD100 grade is for general purpose turning. The cutting tool material contains a binder in addition to diamond particles. This makes the KD100 grade suitable for roughing to finishing all types of highly abrasive workpieces, including non-ferrous metals and non-metallics. Use as your first choice on high content silicon aluminum alloys (hypereutectic). Will generally produce good surface finishes. Provides the best mechanical shock resistance of the diamond tool materials. The cutting edge is sharp. This grade operates at very high speeds.	P M K N S H	
	KD1405 NEW!	C4	**composition:** A pure CVD deposited diamond sheet tool direct brazed to a carbide substrate. **application:** KD1405 is Kennametal's and the industry's most abrasion resistant tool material for non-ferrous and non-metallic materials. KD1405 is best applied when abrasion resistance is the desired benefit. KD1405 is not as tough as KD100, but can withstand moderate interruptions when turning and traditional face milling operations.	P M K N S H	

Kennametal Clamping System

Chip Control Geometry Designation
example: MG-MP = CNMG-432MP

Feed Rate Range
(for best results, use the center 60% of the range)

	operation	insert style application	insert geometry	profile	feed rate – inches / depth of cut – inches	feed rate – (mm) / depth of cut – (mm)
Kenloc Inserts	medium machining ▼▼	MG-MP			.0015 .0025 .004 .006 .010 .016 .025 .040 .060 .100 .200 .004 .006 .010 .016 .025 .040 .060 .100 .160 .250 .500 .006 - .020 (0,2 - 0,5) .030 - .200 (0,8 - 5,1)	0,04 0,063 0,01 0,16 0,25 0,4 0,63 1,0 1,6 2,5 5,0 0,1 0,16 0,25 0,4 0,63 1,0 1,6 2,5 4,0 6,3 10,0

Depth of Cut Range
(for all inserts in the program, select smaller inserts for lighter cuts and larger inserts for heavy cuts)

Chipbreaker Geometry
(section is through nose radius of insert)

Pictorial View of Insert

Primary Workpiece Material Group

- steel
- stainless steel
- cast iron
- non-ferrous
- high-temp alloys
- hardened materials

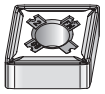
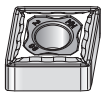
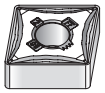
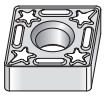
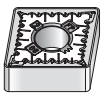
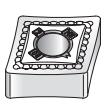
Machining Operation
(what the insert geometry is designed for)

- ▼▼▼▼ – fine finishing
- ▼▼▼ – finishing
- ▼▼ – medium machining
- ▼ – roughing

For detailed grade/geometry recommendations, reference the KENNA PERFECT Selection System.

Chip Control Geometries

Kenloc Inserts

operation	insert style application	insert geometry	profile	feed rate – inches / depth of cut – inches
wiper, finishing	**MG-FW**			.008 - .016 (0,2 - 0,4); .010 - .080 (0,3 - 2,0)
wiper, medium machining	**MG-MW**			.012 - .024 (0,3 - 0,6); .030 - .200 (0,8 - 5,1)
wiper, roughing	**MM-RW**			.010 - .050 (0,3 - 1,3); .050 - .500 (1,3 - 12,7)
fine finishing ▼▼▼▼	**MG-FF**			.002 - .010 (0,1 - 0,3); .003 - .080 (0,1 - 2,0)
finishing sharp ▼▼▼▼	**GG-FS** precision ground			.003 - .010 (0,07 - 0,25); .008 - .080 (0,20 - 2,0)
finishing ▼▼▼	**GG-LF** precision ground			.005 - .020 (0,1 - 0,5); .020 - .120 (0,5 - 3,0)
finishing ▼▼▼	**MG-FP**			.004 - .012 (0,1 - 0,3); .010 - .100 (0,3 - 2,5)
finishing ▼▼▼	**MG-FN**			.005 - .012 (0,1 - 0,3); .010 - .100 (0,3 - 2,5)
finishing ▼▼▼	**MP-K**			.004 - .012 (0,1 - 0,3); .008 - .100 (0,2 - 2,5)
medium sharp ▼▼	**MG-MS**			.005 - .014 (0,12 - 0,35); .030 - .200 (0,76 - 5,0)

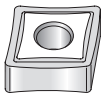
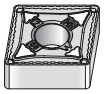
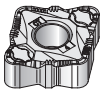
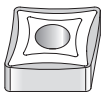
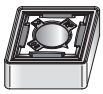
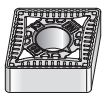
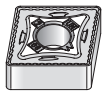
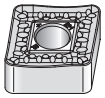
feed rate – inches: .0015 .0025 .004 .006 .010 .016 .025 .040 .060 .100 .200

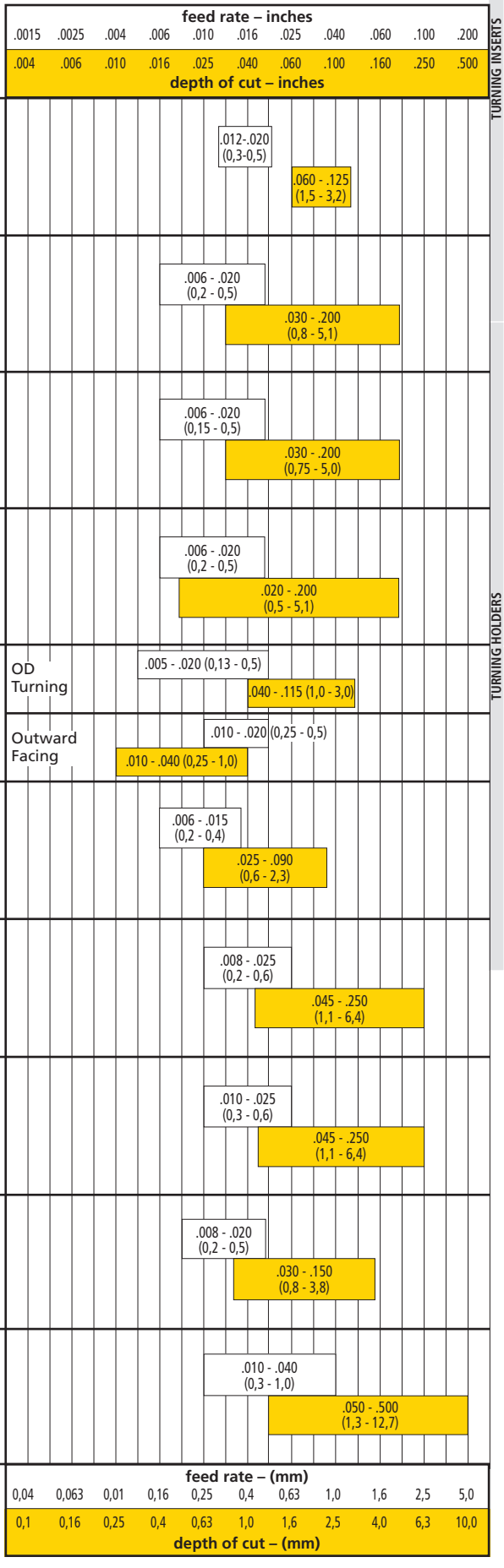
depth of cut – inches: .004 .006 .010 .016 .025 .040 .060 .100 .160 .250 .500

feed rate – (mm): 0,04 0,063 0,01 0,16 0,25 0,4 0,63 1,0 1,6 2,5 5,0

depth of cut – (mm): 0,1 0,16 0,25 0,4 0,63 1,0 1,6 2,5 4,0 6,3 10,0

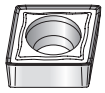
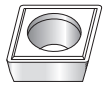
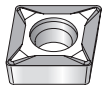
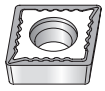
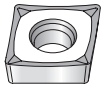
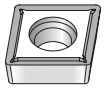
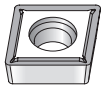
Kenloc Inserts

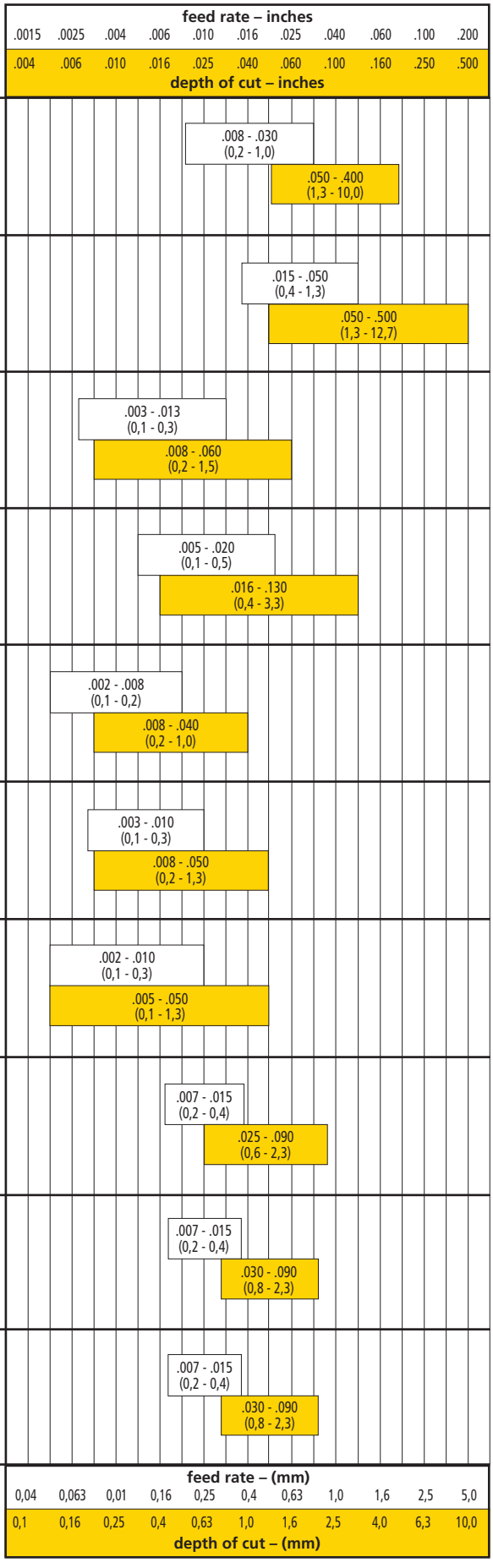
operation	insert style application	insert geometry	profile
medium machining ▼▼	__GP* precision ground		
medium machining ▼▼	MG-MP		
medium machining ▼▼	MG-P		
medium machining ▼▼	MG-MN		
medium machining ▼▼	MG-CT		
medium machining ▼▼	__MS (single sided)		
roughing ▼	MG-RP		
roughing ▼	MG-RN		
roughing ▼	MG-UN		
heavy roughing ▼	MM-RM (single sided)		



*35° and 55° geometries are single sided.

Chip Control Geometries

	operation	insert style application	insert geometry	profile
Kenloc Inserts	heavy roughing ▼	**MM-RP**		
	heavy roughing ▼	**MM-RH** (single sided)		
Screw-On Inserts	wiper, finishing	**MT-FW**		
	wiper, medium finishing	**MT-MW**		
	fine finishing ▼▼▼▼	**__GM** precision ground		
	fine finishing ▼▼▼▼	**MT-11**		
	fine finishing ▼▼▼▼	**MT-UF**		
	finishing ▼▼▼	**GT-HP** precision ground		
	finishing ▼▼▼	**GT-LF** precision ground		
	finishing ▼▼▼	**MT-LF**		



	operation	insert style application	insert geometry	profile	feed rate – inches / depth of cut – inches
Screw-On Inserts	medium machining ▼▼	**MT-MF**			.009 - .017 (0,2 - 0,4); .045 - .090 (1,1 - 2,3)
Kendex positive Inserts	finishing ▼▼▼	**_ _GF** precision ground			.003 - .012 (0,1 - 0,3); .010 - .060 (0,3 - 1,5)
	medium machining ▼▼	**_ _MR**			.008 - .022 (0,2 - 0,6); .045 - .140 (1,1 - 3,6)

feed rate – inches: .0015 | .0025 | .004 | .006 | .010 | .016 | .025 | .040 | .060 | .100 | .200

depth of cut – inches: .004 | .006 | .010 | .016 | .025 | .040 | .060 | .100 | .160 | .250 | .500

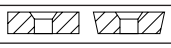
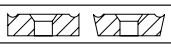
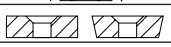
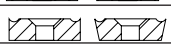
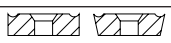
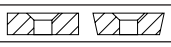
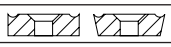
feed rate – (mm): 0,04 | 0,063 | 0,01 | 0,16 | 0,25 | 0,4 | 0,63 | 1,0 | 1,6 | 2,5 | 5,0

depth of cut – (mm): 0,1 | 0,16 | 0,25 | 0,4 | 0,63 | 1,0 | 1,6 | 2,5 | 4,0 | 6,3 | 10,0

Insert Identification System

symbol shape	insert	shape	nose angle (degree)
S		square	90
T		triangular	60
C		rhombic (diamond)	80
D			55
E			75
F			50
M			86
V			35
W		trigon	80
H		hexagonal	120
O		octagonal	135
P		pentagonal	108
L		rectangular	90
A		parallelo-gram-shaped	85
B			82
N/K			55
R		round	–

1. Shape

symbol	hole	shape of hole	chipbreaker	shape of insert's section	alternate symbols ordinary system	alternate symbols "D" less than 1/4"*
N	without		without		N	
R			single sided		R	E
F			double sided		F	
A	with	cylindrical hole	without		A	D
M,P,S			single sided		M	
G,P,Z			double sided		G	
W		partly cylindrical hole, 40-60° countersink	without		A	
T			single sided		M	
Q		partly cylindrical hole, 40-60° double countersink	without		A	
U			double sided		G	
B		partly cylindrical hole, 70-90° countersink	without		A	
H			single sided		M	
C		partly cylindrical hole, 70-90° double countersink	without		A	
J			double sided		G	
X	special				X	X

*Inch system only.

4. Insert Type

Example:

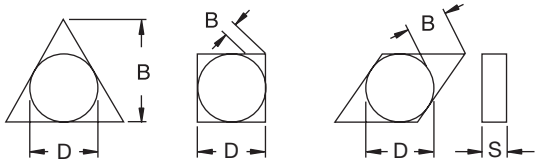
INCH	C	N	M	G	4
METRIC	C	N	M	G	12

2. Relief Angle

N – 0°
A – 3°
B – 5°
C – 7°
P – 11°
D – 15°
E – 20°
F – 25°
G – 30°

3. Tolerance

tolerances: apply prior to edge prep and coating
D: theoretical diameter of the insert inscribed circle
S: thickness
B: See figures below.



tolerance class	tolerance on "D"		tolerance on "B"		tolerance on "S"	
	inch	mm	inch	mm	inch	mm
C	±.0010	±0,025	±.0005	±0,013	±.001	±0,025
H	±.0005	±0,013	±.0005	±0,013	±.001	±0,025
E	±.0010	±0,025	±.0010	±0,025	±.001	±0,025
G	±.0010	±0,025	±.0010	±0,025	±.005	±0,13
M	See tables at right.				±.005	±0,13
U	See tables at right.				±.005	±0,13

5. Size

inch	"D"		Code for metric cutting edge length "L10"						
	inch	mm	C	D	R	S	T	V	W
1.2 (5)	5/32	3,97	S4	04	03	03	06	–	–
1.5 (6)	3/16	4,76	04	05	04	04	08	08	S3
1.8 (7)	7/32	5,56	05	06	05	05	09	09	03
–	.236	6,00	–	–	06	–	–	–	–
2	1/4	6,35	06	07	06	06	11	11	04
2.5	5/16	7,94	08	09	07	07	13	13	05
–	.315	8,00	–	–	08	–	–	–	–
3	3/8	9,52	09	11	09	09	16	16	06
–	.394	10,00	–	–	10	–	–	–	–
3.5	7/16	11,11	11	13	11	11	19	19	07
–	.472	12,00	–	–	12	–	–	–	–
4	1/2	12,70	12	15	12	12	22	22	08
4.5	9/16	14,29	14	17	14	14	24	24	09
5	5/8	15,88	16	19	15	15	27	27	10
–	.630	16,00	–	–	16	–	–	–	–
5.5	11/16	17,46	17	21	17	17	30	30	11
6	3/4	19,05	19	23	19	19	33	33	13
–	.787	20,00	–	–	20	–	–	–	–
7	7/8	22,22	22	27	22	22	38	38	15
–	.984	25,00	–	–	25	–	–	–	–
8	1	25,40	25	31	25	25	44	44	17
10	1 1/4	31,75	32	38	31	31	54	54	21
–	1.260	32,00	–	–	32	–	–	–	–

NOTE: Inch sizes in parenthesis for "alternate symbols" D or E (under 1/4 inch "D").

symbol		thickness	
inch	mm	inch	mm
.5 (1)	–	1/32	0,79
.6	T0	.040	1,00
1 (2)	01	1/16	1,59
1.2	T1	5.64	1,98
1.5 (3)	02	3/32	2,38
2	03	1/8	3,18
2.5	T3	5/32	3,97
3	04	3/16	4,76
3.5	05	7/32	5,56
4	06	1/4	6,35
5	07	5/16	7,94
6	09	3/8	9,52
7	11	7/16	11,11
8	12	1/2	12,70

NOTE:
Inch sizes in parentheses for "alternate symbols" D or E (under 1/4 inch "D").

3. Tolerance Explanation

"D"		± Tolerance on "D"								"D"		± Tolerance on "D"							
		Class M-tolerance				Class U-tolerance						Class M-tolerance				Class U-tolerance			
		Shapes S, T, C, R & W		Shape D		Shape V		Shapes S, T & C				Shapes S, T, C, R & W		Shape D		Shape V		Shapes S, T & C	
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
5/32	3,97	.002	0,05	–	–	–	–	–	–	5/32	3,97	.003	0,06	–	–	–	–	–	–
3/16	4,76			–	–	–	–	.003	0,06	3/16	4,76			–	–	–	–	.005	0,13
7/32	5,56			.002	0,05	.002	0,05			7/32	5,56			.004	0,11	–	–		
1/4	6,35									1/4	6,35					–	–		
5/16	7,94									5/16	7,94					–	–		
3/8	9,52									3/8	9,52					.007	0,18		
7/16	11,11	.003	0,06	.003	0,06	.003	0,06	.005	0,13	7/16	11,11	.005	0,13	.006	0,15	–	–	–	–
1/2	12,70									1/2	12,70					.010	0,25	.008	0,20
9/16	14,29									9/16	14,29					–	–	–	–
5/8	15,88	.004	0,10	.004	0,10	.004	0,10	.007	0,18	5/8	15,88	.006	0,15	.007	0,18	–	–	.011	0,27
11/16	17,46									11/16	17,46					–	–		
3/4	19,05									3/4	19,05					–	–		
7/8	22,22	.005	0,13	–	–	–	–	.010	0,25	7/8	22,22	.007	0,18	–	–	–	–	.015	0,38
1	25,40			–	–	–	–			1	25,40			–	–	–	–		
1 1/4	31,75	.006	0,15	–	–	–	–			1 1/4	31,75	.008	0,20	–	–	–	–		

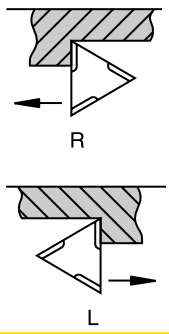
6. Thickness "S"

3 2
04 08

7. Corner Radius "RE"

symbol		corner radius	
inch	mm	inch	mm
X0	X0	.0015	.04
0	01	.004	0,1
.5	02	.008	0,2
1	04	1/64	0,4
2	08	1/32	0,8
3	12	3/64	1,2
4	16	1/16	1,6
5	20	5/64	2,0
6	24	3/32	2,4
7	28	7/64	2,8
8	32	1/8	3,2
–	00	round insert (inch)	
–	M0	round insert (mm)	

8. Hand of Insert (optional)



9./10. Cutting Edge Condition or Chip Control Features (optional)

F	sharp
FF	fine finishing
FN	finishing
MN	medium negative
RN	roughing negative
UN	universal negative
FP	finishing positive
MP	medium positive
RP	roughing positive
RM	roughing medium
RH	roughing heavy
FW	finishing wiper
MW	medium wiper
FS	finishing sharp
MS	medium sharp
RW	roughing wiper
HP	high positive
-11	fine finishing
K	light feed chip control
UF	ultra-fine finishing
LF	light finishing
MF	medium finishing
E	hone only
T	negative land
S	negative land plus hone
MP-K	medium positive
MG-P	medium positive

11./12./13. T-land width (optional)

symbol		size	
ANSI	ISO	inch	mm
04	010	.004	0,01
08	020	.008	0,02

14./15. T-land Angle (optional)

symbol	size
10	10°
15	15°
20	20°
25	25°
30	30°

16. Tip Style (optional)

symbol	usage
D	two-sided mini tip
M	mini tip
MT	multi tip

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
CNGA	CNGA431E																		●				●											●							
	CNGA432																		●				●											●							
	CNGA432E																		●				●											●							
	CNGA432S0420																		●															●							
	CNGA432S0820																		●															●							
	CNGA433																		●					●										●							
	CNGA433E																		●															●							
	CNGA433S0420																		●															●							
	CNGA433S0820																		●															●							
CNGA-FW/ MW MT	CNGA431EFWMT																																			●	●				
	CNGA431S0420FWMT																																			●					
	CNGA432EFWMT																																			●	●				
	CNGA432S0420FWMT																																			●					
	CNGA432S0420MWMT																																			●					
	CNGA433EFWMT																																			●	●				
	CNGA433S0420FWMT																																			●					
	CNGA433S0420MWMT																																			●					
CNGA-MT	CNGA431EMT																																			●					
	CNGA431S0420MT																																			●					
	CNGA431S0425MT																																				●				
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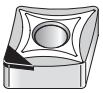
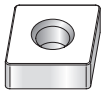
CNMS-E 	CNMS432E																						●																		
CNMS-F	CNMS432F																							●																		
CNGA 	CNGA431														●																				●						
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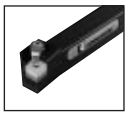
	CNGA431T0820																																				●				
	CNGA432														●																				●						
	CNGA432T0220																																				●				
	CNGA432T0420														●																				●						
	CNGA432T0820															●	●	●																		●					
	CNGA433														●																		●	●							
	CNGA433T0420														●																		●	●							
	CNGA433T0820															●	●	●																		●					
	CNGA434																																●								
	CNGA434T0420														●																		●	●							
	CNGA434T0820															●	●	●																			●				
	CNGA542T0820															●		●																			●				
	CNGA543T0420														●																					●					

* Grade KC9140 available Spring 2005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A204-A209

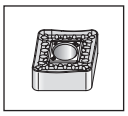
A239-A241

A248-A251

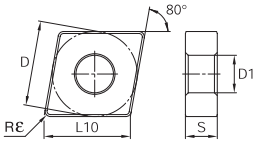
A6-A19

A26-A27

A28-A32


A33-A37

CN..



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNGA431E	CNGA120404E	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNGA
CNGA432	CNGA120408	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432E	CNGA120408E	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432S0420	CNGA120408S01020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432S0820	CNGA120408S02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA433	CNGA120412	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433E	CNGA120412E	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0420	CNGA120412S01020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0820	CNGA120412S02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA431EFWMT	CNGA120404EFWMT	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,15	CNGA-FW/ MW MT
CNGA431S0420FWMT	CNGA120404S01020FWMT	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,15	
CNGA432EFWMT	CNGA120408EFWMT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,15	
CNGA432S0420FWMT	CNGA120408S01020FWMT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,15	
CNGA432S0420MWMT	CNGA120408S01020MWMT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,15	
CNGA433EFWMT	CNGA120412EFWMT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0420FWMT	CNGA120412S01020FWMT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0420MWMT	CNGA120412S01020MWMT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA431EMT	CNGA120404EMT	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNGA-MT
CNGA431S0420MT	CNGA120404S01020MT	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGA431S0425MT	CNGA120404S01025MT	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGA432EMT	CNGA120408EMT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432S0420MT	CNGA120408S01020MT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432S0425MT	CNGA120408S01025MT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA433EMT	CNGA120412EMT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0420MT	CNGA120412S01020MT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433S0425MT	CNGA120412S01025MT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMS432E	CNMS120408E	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMS-E
CNMS432F	CNMS120408F	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMS-F
CNGA431	CNGA120404E	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNGA
CNGA431T0420	CNGA120404T01020	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGA431T0820	CNGA120404T02020	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGA432	CNGA120408E	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432T0220	CNGA120408T00520	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432T0420	CNGA120408T01020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA432T0820	CNGA120408T02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA433	CNGA120412E	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433T0420	CNGA120412T01020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433T0820	CNGA120412T02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA434	CNGA120416E	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNGA434T0420	CNGA120416T01020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNGA434T0820	CNGA120416T02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNGA542T0820	CNGA160608T02020	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNGA543T0420	CNGA160612T01020	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	

Order example:
ANSI catalog number: CNGA431E
Insert grade: KD1405

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K								N				S										H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
CNGA	CNGA543T0820														●	●	●	●																	●	●					
	CNGA544T0420														●		●	●																	●						
	CNGA544T0820															●	●	●																	●	●					
	CNGA642T0420														●																				●						
	CNGA642T0820																																		●	●					
	CNGA643T0420														●																		●		●						
	CNGA643T0820																●	●																		●					
	CNGA644T0420														●																				●						
	CNGA644T0820																●	●																		●					
CNGA-FW	CNGA431FW														●																				●						
	CNGA432FW														●																				●						
	CNGA432T0420FW																●	●																							
	CNGA433FW														●																				●						
	CNGA433T0420FW															●	●	●																							
	CNGA433T0820FW															●																									
	CNGA434T0420FW																●	●																							
CNGG-FS	CNGG430FS																				●				●		●	●												
	CNGG4305FS																				●				●		●	●												
	CNGG431FS																				●				●		●	●												
	CNGG432FS																				●				●		●	●												
	CNGG433FS																				●				●		●	●												
CNGG-LF	CNGG430LF							●													●				●															
	CNGG4305LF							●													●				●															
	CNGG431LF							●													●				●															
	CNGG432LF							●													●				●															
	CNGG433LF							●													●				●															
	CNGG542LF							●																																
	CNGG543LF							●																																
CNGP	CNGP430							●														●			●														
	CNGP4305							●														●			●														
	CNGP431							●													●	●			●														
	CNGP432							●													●	●			●														
	CNGP433							●													●	●			●														
	CNGP434							●													●	●			●														
CNMA	CNMA431												●	●																									
	CNMA432												●	●							●				●														
	CNMA432S0820																			●																		●	
	CNMA432T0820																	●																					
	CNMA433												●	●							●				●														
	CNMA433E																			●																		●	
	CNMA433S0820																			●																		●	
	CNMA433T0820																	●																					
	CNMA434												●	●																									
	CNMA434S0820																			●																		●	
	CNMA434T0820																	●																					
	CNMA542												●	●																									
	CNMA543												●	●																									
	CNMA543T0820																	●																					
	CNMA544												●	●																									
	CNMA544T0820																	●																					
	CNMA642												●	●																									
	CNMA643												●	●																									
	CNMA644												●	●																									

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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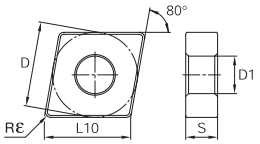

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNGA543T0820	CNGA160612T02020	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	CNGA
CNGA544T0420	CNGA160616T01020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNGA544T0820	CNGA160616T02020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNGA642T0420	CNGA190608T01020	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.312	7,93	
CNGA642T0820	CNGA190608T02020	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.312	7,93	
CNGA643T0420	CNGA190612T01020	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.312	7,93	
CNGA643T0820	CNGA190612T02020	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNGA644T0420	CNGA190616T01020	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNGA644T0820	CNGA190616T02020	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNGA431FW	CNGA120404EFW	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,15	CNGA-FW
CNGA432FW	CNGA120408EFW	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,15	
CNGA432T0420FW	CNGA120408T01020FW	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGA433FW	CNGA120412EFW	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433T0420FW	CNGA120412T01020FW	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA433T0820FW	CNGA120412T02020FW	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGA434T0420FW	CNGA120416T01020FW	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNGG430FS	CNGG120401FS	1/2	12,70	.51	12,90	3/16	4,76	.004	0,1	.203	5,16	CNGG-FS
CNGG4305FS	CNGG120402FS	1/2	12,70	.51	12,90	3/16	4,76	.008	0,2	.203	5,16	
CNGG431FS	CNGG120404FS	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGG432FS	CNGG120408FS	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGG433FS	CNGG120412FS	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGG430LF	CNGG120401LF	1/2	12,70	.51	12,90	3/16	4,76	.004	0,1	.203	5,16	CNGG-LF
CNGG4305LF	CNGG120402LF	1/2	12,70	.51	12,90	3/16	4,76	.008	0,2	.203	5,16	
CNGG431LF	CNGG120404LF	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGG432LF	CNGG120408LF	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGG433LF	CNGG120412LF	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGG542LF	CNGG160608LF	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNGG543LF	CNGG160612LF	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNGP430	CNGP120401	1/2	12,70	.51	12,90	3/16	4,76	.004	0,1	.203	5,16	CNGP
CNGP4305	CNGP120402	1/2	12,70	.51	12,90	3/16	4,76	.008	0,2	.203	5,16	
CNGP431	CNGP120404	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNGP432	CNGP120408	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNGP433	CNGP120412	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNGP434	CNGP120416	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMA431	CNMA120404	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMA
CNMA432	CNMA120408	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMA432S0820	CNMA120408S02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMA432T0820	CNMA120408T02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMA433	CNMA120412	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMA433E	CNMA120412E	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMA433S0820	CNMA120412S02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMA433T0820	CNMA120412T02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMA434	CNMA120416	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMA434S0820	CNMA120416S02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMA434T0820	CNMA120416T02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMA542	CNMA160608	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMA543	CNMA160612	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMA543T0820	CNMA160612T02020	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMA544	CNMA160616	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMA544T0820	CNMA160616T02020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMA642	CNMA190608	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMA643	CNMA190612	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMA644	CNMA190616	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	

Order example:
ANSI catalog number: CNGA543T0820
Insert grade: KY1310

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S									H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
CNMA-MW	CNMA432S0820MW																			●																			●		
	CNMA433S0820MW																			●																			●		
CNMG-CT	CNMG432CT		●	●				●	●	●			●															●	●											
	CNMG433CT		●	●				●	●	●			●															●	●											
	CNMG434CT		●	●				●	●	●			●															●	●											
CNMG-FF	CNMG321FF	●	●				●	●	●			●																●												
	CNMG322FF	●	●				●	●	●			●																●												
	CNMG431FF	●	●				●	●	●			●																●												
	CNMG432FF	●	●				●	●	●			●																●												
CNMG-FN	CNMG321FN	●	●	●			●					●	●																											
	CNMG322FN	●	●	●			●					●	●																											
	CNMG431FN	●	●	●			●					●	●																											
	CNMG432FN	●	●	●			●					●	●																											
	CNMG433FN	●	●	●			●					●	●																											
	CNMG434FN	●	●	●			●					●	●																											
CNMG-FP	CNMG431FP	●			●		●	●	●			●																●										●	
	CNMG432FP	●			●		●	●	●			●																●										●	
	CNMG433FP	●			●		●	●	●			●																●											
CNMG-FW	CNMG431FW	●	●				●	●	●			●	●																●											
	CNMG432FW	●	●				●	●	●			●	●																●											
	CNMG433FW	●	●				●	●	●			●	●																●											
CNMG-MN	CNMG321MN		●	●	●	●																																	
	CNMG322MN		●	●	●	●																																	
	CNMG323MN		●	●	●	●																																	
	CNMG431MN		●	●	●	●																																●	
	CNMG432MN		●	●	●	●																																●	
	CNMG433MN		●	●	●	●																																●	
	CNMG434MN		●	●	●	●																																	
	CNMG542MN		●	●	●	●																																	
	CNMG543MN		●	●	●	●																																	
	CNMG544MN		●	●	●	●																																	
	CNMG642MN		●	●	●	●																																	
	CNMG643MN		●	●	●	●																																	
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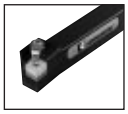
	CNMG646MN		●	●	●	●																																	

* Grade KC9140 available Spring 2005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A204-A209

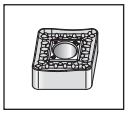
A239-A241

A248-A251

A6-A19

A26-A27

A28-A32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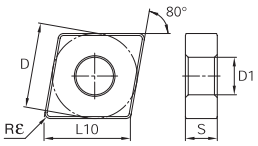


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNMA432S0820MW	CNMA120408S02020MW	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMA-MW
CNMA433S0820MW	CNMA120412S02020MW	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG432CT	CNMG120408CT	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMG-CT
CNMG433CT	CNMG120412CT	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434CT	CNMG120416CT	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG321FF	CNMG090304FF	3/8	9,53	.38	9,67	1/8	3,18	1/64	0,4	.150	3,81	CNMG-FF
CNMG322FF	CNMG090308FF	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	.150	3,81	
CNMG431FF	CNMG120404FF	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNMG432FF	CNMG120408FF	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG321FN	CNMG090304FN	3/8	9,53	.38	9,67	1/8	3,18	1/64	0,4	.150	3,81	CNMG-FN
CNMG322FN	CNMG090308FN	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	.150	3,81	
CNMG431FN	CNMG120404FN	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNMG432FN	CNMG120408FN	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433FN	CNMG120412FN	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434FN	CNMG120416FN	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG431FP	CNMG120404FP	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMG-FP
CNMG432FP	CNMG120408FP	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433FP	CNMG120412FP	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG431FW	CNMG120404FW	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMG-FW
CNMG432FW	CNMG120408FW	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433FW	CNMG120412FW	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG321MN	CNMG090304MN	3/8	9,53	.38	9,67	1/8	3,18	1/64	0,4	.150	3,81	CNMG-MN
CNMG322MN	CNMG090308MN	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	.150	3,81	
CNMG323MN	CNMG090312MN	3/8	9,53	.38	9,67	1/8	3,18	3/64	1,2	.150	3,81	
CNMG431MN	CNMG120404MN	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNMG432MN	CNMG120408MN	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433MN	CNMG120412MN	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434MN	CNMG120416MN	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542MN	CNMG160608MN	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543MN	CNMG160612MN	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544MN	CNMG160616MN	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG642MN	CNMG190608MN	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMG643MN	CNMG190612MN	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644MN	CNMG190616MN	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG646MN	CNMG190624MN	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	

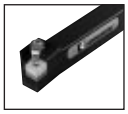
Order example:
ANSI catalog number: CNGA543T0820
Insert grade: KB9640

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K										N				S								H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
CNMG-MP	CNMG322MP				●			●	●	●	●																		●	●	●										
	CNMG431MP				●			●	●	●	●																		●	●	●									●	●
	CNMG432MP				●			●	●	●	●																		●	●	●									●	●
	CNMG433MP				●			●	●	●	●																		●	●	●									●	●
	CNMG434MP				●			●	●	●	●																		●	●	●										
	CNMG542MP				●			●	●	●	●																		●	●	●										
	CNMG543MP				●			●	●	●	●																		●	●	●										
	CNMG544MP				●			●	●	●	●																		●	●	●										
	CNMG642MP				●			●	●	●	●																		●	●	●										
	CNMG643MP				●			●	●	●	●																		●	●	●										
	CNMG644MP				●			●	●	●	●																		●	●	●										
CNMG-MS	CNMG430MS																				●				●		●	●												
	CNMG4305MS																				●				●		●	●												
	CNMG431MS																				●				●		●	●												
	CNMG432MS																				●				●		●	●												
	CNMG433MS																				●				●		●	●												
	CNMG434MS																				●				●		●	●												
	CNMG542MS																				●				●		●	●												
	CNMG543MS																				●				●		●	●												
	CNMG642MS																				●				●		●	●												
	CNMG643MS																				●				●		●	●												
	CNMG644MS																				●				●		●	●												
CNMG-MW	CNMG432MW		●	●	●				●	●			●	●															●	●										
	CNMG433MW		●	●	●				●	●			●	●															●	●										
CNMG-P	CNMG431P							●	●	●																			●	●										
	CNMG432P							●	●	●																			●	●										
	CNMG433P							●	●	●																			●	●										
	CNMG434P								●	●																			●	●										
	CNMG542P								●	●																			●	●										
	CNMG543P								●	●																			●	●										
	CNMG544P								●	●																			●	●										
	CNMG643P							●	●	●																			●	●										
	CNMG644P								●	●																			●	●										
CNMG-RN	CNMG432RN		●	●	●	●																																	●
	CNMG433RN		●	●	●	●																																	●
	CNMG434RN		●	●	●	●																																	●
	CNMG542RN		●	●	●	●																																	
	CNMG543RN		●	●	●	●																																	●
	CNMG544RN		●	●	●	●																																	●
	CNMG642RN		●	●	●	●																																	
	CNMG643RN		●	●	●	●																																	●
	CNMG644RN		●	●	●	●																																	●
	CNMG646RN		●	●	●	●																																	

* Grade KC9140 available Spring 2005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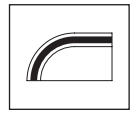
A204-A209

A239-A241

A248-A251

A6-A19

A26-A27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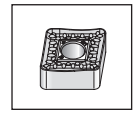
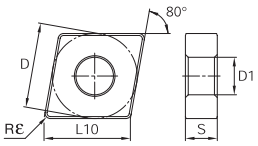

A33-A37

CN..

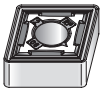
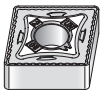


ANSI catalog number	ISO catalog number	D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNMG322MP	**CNMG090308MP**	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	.150	3,81	**CNMG-MP**
CNMG431MP	**CNMG120404MP**	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNMG432MP	**CNMG120408MP**	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433MP	**CNMG120412MP**	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434MP	**CNMG120416MP**	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542MP	**CNMG160608MP**	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543MP	**CNMG160612MP**	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544MP	**CNMG160616MP**	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG642MP	**CNMG190608MP**	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMG643MP	**CNMG190612MP**	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644MP	**CNMG190616MP**	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG430MS	**CNMG120401MS**	1/2	12,70	.51	12,90	3/16	4,76	.004	0,1	.203	5,16	**CNMG-MS**
CNMG4305MS	**CNMG120402MS**	1/2	12,70	.51	12,90	3/16	4,76	.008	0,2	.203	5,16	
CNMG431MS	**CNMG120404MS**	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	
CNMG432MS	**CNMG120408MS**	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433MS	**CNMG120412MS**	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434MS	**CNMG120416MS**	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542MS	**CNMG160608MS**	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543MS	**CNMG160612MS**	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG642MS	**CNMG190608MS**	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMG643MS	**CNMG190612MS**	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644MS	**CNMG190616MS**	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG432MW	**CNMG120408MW**	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	**CNMG-MW**
CNMG433MW	**CNMG120412MW**	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG431P	**CNMG120404P**	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	**CNMG-P**
CNMG432P	**CNMG120408P**	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433P	**CNMG120412P**	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434P	**CNMG120416P**	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542P	**CNMG160608P**	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543P	**CNMG160612P**	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544P	**CNMG160616P**	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG643P	**CNMG190612P**	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644P	**CNMG190616P**	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG432RN	**CNMG120408RN**	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	**CNMG-RN**
CNMG433RN	**CNMG120412RN**	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434RN	**CNMG120416RN**	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542RN	**CNMG160608RN**	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543RN	**CNMG160612RN**	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544RN	**CNMG160616RN**	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG642RN	**CNMG190608RN**	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMG643RN	**CNMG190612RN**	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644RN	**CNMG190616RN**	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG646RN	**CNMG190624RN**	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	

Order example:
ANSI catalog number: CNMG322MP
Insert grade: KC8050

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
CNMG-RP 	CNMG431RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										
	CNMG432RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	CNMG433RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	CNMG434RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	CNMG542RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										
	CNMG543RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	CNMG544RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	CNMG643RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										
	CNMG644RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
CNMG-UN 	CNMG431UN												●	●																										
	CNMG432UN												●	●																										
	CNMG433UN												●	●																										
	CNMG434UN												●	●																										
	CNMG542UN												●	●																										
	CNMG543UN												●	●																										
	CNMG544UN												●	●																										
	CNMG642UN												●	●																										
	CNMG643UN												●	●																										
	CNMG644UN												●	●																										
CNMM-RH	CNMM643RH		●	●	●	●																																
	CNMM644RH		●	●	●	●																																		
	CNMM646RH		●	●	●	●																																		
	CNMM866RH		●	●	●	●																																		
CNMM-RM	CNMM432RM		●	●	●																																		
	CNMM433RM		●	●	●																																			
	CNMM434RM		●	●	●																																			
	CNMM543RM		●	●	●																																			
	CNMM544RM		●	●	●																																			
	CNMM546RM		●	●	●																																			
	CNMM643RM		●	●	●																																			
	CNMM644RM		●	●	●																																			
	CNMM646RM		●	●	●																																			
	CNMM866RM		●	●	●																																			
CNMM-RP	CNMM432RP		●	●					●	●																		●	●											
	CNMM433RP		●	●					●	●																		●	●											
	CNMM434RP		●	●					●	●																		●	●											
	CNMM542RP		●	●					●	●																		●	●											
	CNMM543RP		●	●					●	●																		●	●											
	CNMM544RP		●	●					●	●																		●	●											
	CNMM643RP		●	●					●	●																		●	●											
	CNMM644RP		●	●					●	●																		●	●											
	CNMM646RP		●	●					●	●																		●	●											
	CNMM866RP				●																																			
CNMM-RW	CNMM646RW		●	●	●																																		
	CNMM866RW		●	●	●																																			

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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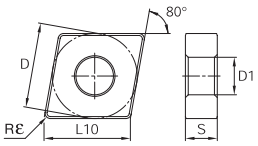
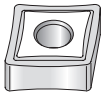
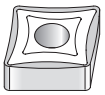
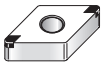
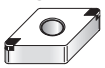
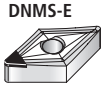


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNMG431RP	CNMG120404RP	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMG-RP
CNMG432RP	CNMG120408RP	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433RP	CNMG120412RP	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434RP	CNMG120416RP	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542RP	CNMG160608RP	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543RP	CNMG160612RP	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544RP	CNMG160616RP	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG643RP	CNMG190612RP	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644RP	CNMG190616RP	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMG431UN	CNMG120404UN	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMG-UN
CNMG432UN	CNMG120408UN	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMG433UN	CNMG120412UN	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMG434UN	CNMG120416UN	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMG542UN	CNMG160608UN	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMG543UN	CNMG160612UN	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMG544UN	CNMG160616UN	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMG642UN	CNMG190608UN	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMG643UN	CNMG190612UN	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMG644UN	CNMG190616UN	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMM643RH	CNMM190612RH	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	CNMM-RH
CNMM644RH	CNMM190616RH	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMM646RH	CNMM190624RH	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	
CNMM866RH	CNMM250924RH	1	25,40	1.02	25,79	3/8	9,53	3/32	2,4	.359	9,12	
CNMM432RM	CNMM120408RM	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMM-RM
CNMM433RM	CNMM120412RM	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMM434RM	CNMM120416RM	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMM543RM	CNMM160612RM	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMM544RM	CNMM160616RM	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMM546RM	CNMM160624RM	5/8	15,88	.63	16,12	1/4	6,35	3/32	2,4	.250	6,35	
CNMM643RM	CNMM190612RM	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMM644RM	CNMM190616RM	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMM646RM	CNMM190624RM	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	
CNMM866RM	CNMM250924RM	1	25,40	1.02	25,79	3/8	9,53	3/32	2,4	.359	9,12	
CNMM432RP	CNMM120408RP	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMM-RP
CNMM433RP	CNMM120412RP	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMM434RP	CNMM120416RP	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	.203	5,16	
CNMM542RP	CNMM160608RP	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMM543RP	CNMM160612RP	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	
CNMM544RP	CNMM160616RP	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	.250	6,35	
CNMM643RP	CNMM190612RP	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,94	
CNMM644RP	CNMM190616RP	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	.313	7,93	
CNMM646RP	CNMM190624RP	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	
CNMM866RP	CNMM250924RP	1	25,40	1.02	25,79	3/8	9,53	3/32	2,4	.359	9,13	
CNMM646RW	CNMM190624RW	3/4	19,05	.76	19,34	1/4	6,35	3/32	2,4	.313	7,93	CNMM-RW
CNMM866RW	CNMM250924RW	1	25,40	1.02	25,79	3/8	9,53	3/32	2,4	.359	9,12	

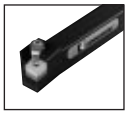
Order example:
ANSI catalog number: CNMG431RP
Insert grade: KC9110

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
CNMP 	**CNMP543**																					●																			
	CNMP643																					●																			
CNMP-K	**CNMP431K**		●	●																																				
	CNMP432K		●	●																																				
	CNMP433K		●	●																																				
CNMS 	**CNMS432**																					●				●															
	CNMS542																					●				●															
	CNMS642																					●				●															
	CNMS643																									●															
DNGA	**DNGA431E**																						●																		
	DNGA432																		●				●	●											●							
	DNGA432E																		●				●												●							
	DNGA432S0420																		●																●							
	DNGA432S0820																		●																●							
	DNGA433																							●																	
	DNGA433S0420																		●																●							
	DNGA433S0820																		●																●							
DNGA-FW/ MW MT 	**DNGA431EFWMT**																																			●	●				
	DNGA431S0420FWMT																																			●					
	DNGA432EFWMT																																			●	●				
	DNGA432S0420FWMT																																			●					
	DNGA432S0420MWMT																																			●					
	DNGA433EFWMT																																			●	●				
	DNGA433S0420FWMT																																			●					
	DNGA433S0420MWMT																																			●					
	DNGA442S0420FWMT																																			●					
	DNGA442S0420MWMT																																			●					
DNGA-MT 	**DNGA431EMT**																																			●					
	DNGA431S0420MT																																			●					
	DNGA431S0425MT																																				●				
	DNGA432EMT																																			●	●				
	DNGA432S0420MT																																			●					
	DNGA432S0425MT																																				●				
	DNGA433EMT																																			●	●				
	DNGA433S0420MT																																			●					
	DNGA433S0425MT																																				●				
	DNGA442S0420MT																																			●					
DNMS-E 	**DNMS432E**																						●																		

* Grade KC9140 available Spring 2005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A204-A209

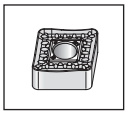
A239-A241

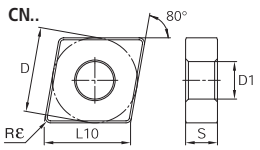
A248-A251

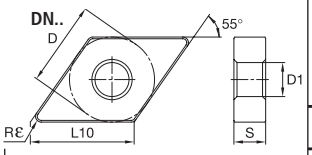
A6-A19

A26-A27

A28-A32


A33-A37



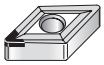
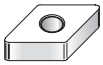
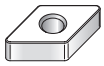


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CNMP543	CNMP160612	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	.250	6,35	CNMP
CNMP643	CNMP190612	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
CNMP431K	CNMP120404K	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	.203	5,16	CNMP-K
CNMP432K	CNMP120408K	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	
CNMP433K	CNMP120412K	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	.203	5,16	
CNMS432	CNMS120408	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	.203	5,16	CNMS
CNMS542	CNMS160608	5/8	15,88	.63	16,12	1/4	6,35	1/32	0,8	.250	6,35	
CNMS642	CNMS190608	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	.313	7,93	
CNMS643	CNMS190612	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	.313	7,93	
DNGA431E	DNGA150404E	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNGA
DNGA432	DNGA150408	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432E	DNGA150408E	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0420	DNGA150408S01020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0820	DNGA150408S02020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA433	DNGA150412	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0420	DNGA150412S01020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0820	DNGA150412S02020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA431EFWMT	DNGA150404EFWMT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNGA-FW/ MW MT
DNGA431S0420FWMT	DNGA150404S01020FWMT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGA432EFWMT	DNGA150408EFWMT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0420FWMT	DNGA150408S01020FWMT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0420MWMT	DNGA150408S01020MWMT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA433EFWMT	DNGA150412EFWMT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0420FWMT	DNGA150412S01020FWMT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0420MWMT	DNGA150412S01020MWMT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA442S0420FWMT	DNGA150608S01020FWMT	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGA442S0420MWMT	DNGA150608S01020MWMT	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGA431EMT	DNGA150404EMT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNGA-MT
DNGA431S0420MT	DNGA150404S01020MT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGA431S0425MT	DNGA150404S01025MT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGA432EMT	DNGA150408EMT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0420MT	DNGA150408S01020MT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432S0425MT	DNGA150408S01025MT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA433EMT	DNGA150412EMT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0420MT	DNGA150412S01020MT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433S0425MT	DNGA150412S01025MT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA442S0420MT	DNGA150608S01020MT	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMS432E	DNMS150408E	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMS-E

Order example:
ANSI catalog number: CNMP543
Insert grade: KC5410

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K								N				S											H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
DNMS-F 	**DNMS432F**																							●																	
DNGA-FW 	**DNGA431FW**														●																				●						
	DNGA432FW														●																				●						
	DNGA433FW														●																				●						
DNGA 	**DNGA431**														●																				●						
	DNGA431T0420														●																				●						
	DNGA431T0820																																		●						
	DNGA432														●																				●						
	DNGA432T0420														●																		●		●						
	DNGA432T0820															●	●	●																	●						
	DNGA433														●																				●						
	DNGA433T0420														●																		●		●						
	DNGA433T0820															●	●	●																	●						
	DNGA434T0420														●																				●						
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	DNGA441T0820																																		●						
	DNGA442T0420														●																				●						
	DNGA442T0820																	●																		●						
	DNGA443T0420														●																				●						
	DNGA443T0820																	●																		●						
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	DNGA444T0820																	●																								
	DNGA542T0820																																		●						
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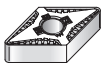
	DNGA544																																●								
	DNGA544T0820																																		●						
DNGG-FS 	**DNGG330FS**																				●			●	●		●	●													
	DNGG3305FS																				●			●	●		●	●													
	DNGG331FS																				●			●	●		●	●													
	DNGG332FS																				●			●	●		●	●													
	DNGG430FS																				●			●	●		●	●													
	DNGG4305FS																				●			●	●		●	●													
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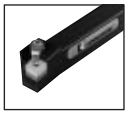
	DNGG433FS																				●			●	●		●	●													
	DNGG434FS																				●			●	●		●	●													
	DNGG441FS																				●			●	●		●	●													
	DNGG442FS																				●			●	●		●	●													
DNGG-LF	**DNGG4305LF**							●													●			●																
	DNGG431LF							●													●			●																
	DNGG432LF							●													●			●																

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

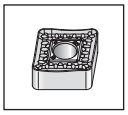
A239-A241

A248-A251

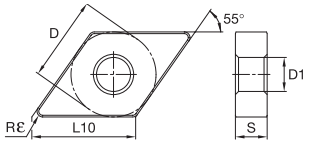
A6-A19

A26-A27

A28-A32


A33-A37

DN..

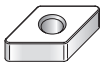
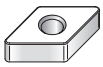
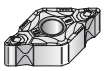


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DNMS432F	DNMS150408F	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMS-F
DNGA431FW	DNGA150404EFW	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNGA-FW
DNGA432FW	DNGA150408EFW	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA433FW	DNGA150412EFW	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA431	DNGA150404E	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNGA
DNGA431T0420	DNGA150404T01020	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGA431T0820	DNGA150404T02020	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGA432	DNGA150408E	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432T0420	DNGA150408T01020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA432T0820	DNGA150408T02020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGA433	DNGA150412E	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433T0420	DNGA150412T01020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA433T0820	DNGA150412T02020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGA434T0420	DNGA150416T01020	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNGA434T0820	DNGA150416T02020	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNGA441T0820	DNGA150604T02020	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNGA442T0420	DNGA150608T01020	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGA442T0820	DNGA150608T02020	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGA443T0420	DNGA150612T01020	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNGA443T0820	DNGA150612T02020	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNGA444T0420	DNGA150616T01020	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNGA444T0820	DNGA150616T02020	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNGA542T0820	DNGA190608T02020	5/8	15,88	.76	19,38	1/4	6,35	1/32	0,8	.250	6,35	
DNGA543T0820	DNGA190612T02020	5/8	15,88	.76	19,38	1/4	6,35	3/64	1,2	.250	6,35	
DNGA544	DNGA190616E	5/8	15,88	.76	19,38	1/4	6,35	1/16	1,6	.250	6,35	
DNGA544T0820	DNGA190616T02020	5/8	15,88	.76	19,38	1/4	6,35	1/16	1,6	.250	6,35	
DNGG330FS	DNGG110401FS	3/8	9,52	.46	11,63	3/16	4,76	.004	0,1	.150	3,81	DNGG-FS
DNGG3305FS	DNGG110402FS	3/8	9,52	.46	11,63	3/16	4,76	.008	0,2	.150	3,81	
DNGG331FS	DNGG110404FS	3/8	9,52	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	
DNGG332FS	DNGG110408FS	3/8	9,52	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNGG430FS	DNGG150401FS	1/2	12,70	.61	15,50	3/16	4,76	.004	0,1	.203	5,16	
DNGG4305FS	DNGG150402FS	1/2	12,70	.61	15,50	3/16	4,76	.008	0,2	.203	5,16	
DNGG431FS	DNGG150404FS	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGG432FS	DNGG150408FS	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGG433FS	DNGG150412FS	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGG434FS	DNGG150416FS	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNGG441FS	DNGG150604FS	1/2	12,70	.61	15,50	1/2	6,35	1/64	0,4	.203	5,16	
DNGG442FS	DNGG150608FS	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGG4305LF	DNGG150402LF	1/2	12,70	.61	15,50	3/16	4,76	.008	0,2	.203	5,16	DNGG-LF
DNGG431LF	DNGG150404LF	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGG432LF	DNGG150408LF	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	

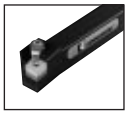
Order example:
ANSI catalog number: DNMS432F
Insert grade: KD100

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
DNGP	DNGP430							●														●																	
	DNGP4305							●													●	●																	
	DNGP431							●													●	●			●														
	DNGP432							●														●			●														
	DNGP433																					●			●														
	DNGP441							●														●			●														
	DNGP442							●														●			●														
	DNGP443																					●			●														
DNMA 	DNMA332												●	●																									
	DNMA332S0820																			●																		●	
	DNMA333												●	●																									
	DNMA333S0820																			●																		●	
	DNMA432												●	●																									
	DNMA432T0820																	●																					
	DNMA433												●	●																									
	DNMA433T0820																	●																					
	DNMA434												●	●																									
	DNMA442												●	●																									
	DNMA443												●	●																									
	DNMA443T0820																	●																					
	DNMA444												●	●																									
DNMA-MW 	DNMA332S0820MW																			●																		●	
	DNMA333S0820MW																			●																		●	
DNMG-CT 	DNMG331CT		●	●				●	●	●			●																●	●									
	DNMG332CT		●	●				●	●	●			●																●	●									
	DNMG431CT		●	●				●	●	●			●																●	●									
	DNMG432CT		●	●				●	●	●			●																●	●									
	DNMG433CT		●	●				●	●	●			●																●	●									
	DNMG441CT		●	●				●	●	●			●																●	●									
	DNMG442CT		●	●				●	●	●			●																●	●									
	DNMG443CT		●	●				●	●	●			●																●	●									
DNMG-FF	DNMG331FF	●	●				●	●	●			●																●										
	DNMG332FF	●	●				●	●	●			●																●										
	DNMG431FF	●	●				●	●	●			●																●										
	DNMG432FF	●	●				●	●	●			●																●										
	DNMG441FF	●	●				●	●	●			●																●										
	DNMG442FF	●	●				●	●	●			●																●										
DNMG-FN	DNMG331FN	●	●	●			●					●	●																									
	DNMG332FN	●	●	●			●					●	●																									
	DNMG333FN	●	●	●			●					●	●																									
	DNMG431FN	●	●	●			●					●	●																									
	DNMG432FN	●	●	●			●					●	●																									
	DNMG433FN	●	●	●			●					●	●																									
	DNMG441FN	●	●	●			●					●	●																									
	DNMG442FN	●	●	●			●					●	●																									
	DNMG443FN	●	●	●			●					●	●																									

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

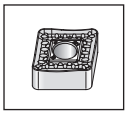
A239-A241

A248-A251

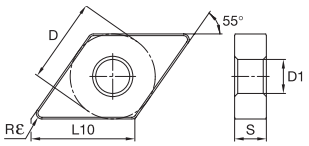
A6-A19

A26-A27

A28-A32


A33-A37

DN..

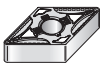


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DNGP430	DNGP150401	1/2	12,70	.61	15,50	3/16	4,76	.004	0,1	.203	5,16	DNGP
DNGP4305	DNGP150402	1/2	12,70	.61	15,50	3/16	4,76	.008	0,2	.203	5,16	
DNGP431	DNGP150404	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNGP432	DNGP150408	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNGP433	DNGP150412	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNGP441	DNGP150604	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNGP442	DNGP150608	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNGP443	DNGP150612	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMA332	DNMA110408	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMA
DNMA332S0820	DNMA110408S02020	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMA333	DNMA110412	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMA333S0820	DNMA110412S02020	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMA432	DNMA150408	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMA432T0820	DNMA150408T02020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMA433	DNMA150412	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMA443T0820	DNMA150612T02020	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMA434	DNMA150416	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMA442	DNMA150608	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMA443	DNMA150612	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMA443T0820	DNMA150612T02020	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMA444	DNMA150616	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMA332S0820MW	DNMA110408S02020MW	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMA-MW
DNMA333S0820MW	DNMA110412S02020MW	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG331CT	DNMG110404CT	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-CT
DNMG332CT	DNMG110408CT	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG431CT	DNMG150404CT	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432CT	DNMG150408CT	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433CT	DNMG150412CT	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG441CT	DNMG150604CT	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442CT	DNMG150608CT	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443CT	DNMG150612CT	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG331FF	DNMG110404FF	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-FF
DNMG332FF	DNMG110408FF	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG431FF	DNMG150404FF	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432FF	DNMG150408FF	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG441FF	DNMG150604FF	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442FF	DNMG150608FF	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG331FN	DNMG110404FN	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-FN
DNMG332FN	DNMG110408FN	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG333FN	DNMG110412FN	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG431FN	DNMG150404FN	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432FN	DNMG150408FN	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433FN	DNMG150412FN	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG441FN	DNMG150604FN	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442FN	DNMG150608FN	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443FN	DNMG150612FN	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	

Order example:
ANSI catalog number: DNGP430
Insert grade: KC5010

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
DNMG-FP	DNMG331FP	●			●		●	●	●			●																●											●	
	DNMG332FP	●			●		●	●	●			●																●											●	
	DNMG431FP	●			●		●	●	●			●																●											●	
	DNMG432FP	●			●		●	●	●			●																●											●	
	DNMG433FP	●			●		●	●	●			●																●												
	DNMG441FP	●			●		●	●	●			●																●											●	
	DNMG442FP	●			●		●	●	●			●																●											●	
	DNMG443FP	●			●		●	●	●			●																●												
DNMG-FW	DNMG331FW	●	●				●	●	●			●	●																●												
	DNMG332FW	●	●				●	●	●			●	●																●												
	DNMG431FW	●	●				●	●	●			●	●																												
	DNMG432FW	●	●				●	●	●			●	●																●												
	DNMG441FW	●	●				●	●	●			●	●																●												
	DNMG442FW	●	●				●	●	●			●	●																●												
DNMG-MN 	DNMG331MN		●	●	●	●																																●
	DNMG332MN		●	●	●	●																																●
	DNMG333MN		●	●	●	●																																●
	DNMG431MN		●	●	●	●																																●
	DNMG432MN		●	●	●	●																																●
	DNMG433MN		●	●	●	●																																●
	DNMG434MN		●	●	●	●																																
	DNMG441MN		●	●	●	●																																●
	DNMG442MN		●	●	●	●																																●
	DNMG443MN		●	●	●	●																																●
	DNMG444MN		●	●	●	●																																
	DNMG543MN		●		●																																	
DNMG-MP	DNMG332MP				●			●	●	●	●																		●	●	●								●	●
	DNMG333MP				●			●	●	●	●																		●	●	●								●	●
	DNMG431MP				●			●	●	●	●																		●	●	●								●	●
	DNMG432MP				●			●	●	●	●																		●	●	●								●	●
	DNMG433MP				●			●	●	●	●																		●	●	●								●	●
	DNMG441MP				●			●	●	●	●																		●	●	●								●	●
	DNMG442MP				●			●	●	●	●																		●	●	●								●	●
	DNMG443MP				●			●	●	●	●																		●	●	●								●	●
DNMG-MS	DNMG332MS																				●				●		●	●											
	DNMG333MS																				●				●		●	●											
	DNMG430MS																				●				●		●	●											
	DNMG4305MS																				●				●		●	●											
	DNMG431MS																				●				●		●	●											
	DNMG432MS																				●				●		●	●											
	DNMG433MS																				●				●		●	●											
	DNMG441MS																				●				●		●	●											
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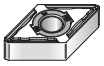
DNMG-MW 	DNMG432MW		●	●	●				●	●			●	●															●	●									
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	DNMG442MW		●	●	●				●	●			●	●															●	●									
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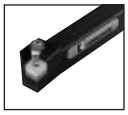
* Grade KC9140 available Spring 2005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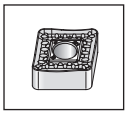
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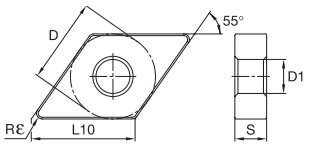
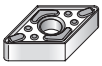
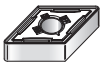


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DNMG331FP	DNMG110404FP	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-FP
DNMG332FP	DNMG110408FP	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG431FP	DNMG150404FP	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432FP	DNMG150408FP	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433FP	DNMG150412FP	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG441FP	DNMG150604FP	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442FP	DNMG150608FP	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443FP	DNMG150612FP	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG331FW	DNMG110404FW	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-FW
DNMG332FW	DNMG110408FW	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG431FW	DNMG150404FW	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432FW	DNMG150408FW	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG441FW	DNMG150604FW	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442FW	DNMG150608FW	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG331MN	DNMG110404MN	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMG-MN
DNMG332MN	DNMG110408MN	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMG333MN	DNMG110412MN	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG431MN	DNMG150404MN	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432MN	DNMG150408MN	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433MN	DNMG150412MN	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG434MN	DNMG150416MN	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMG441MN	DNMG150604MN	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442MN	DNMG150608MN	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443MN	DNMG150612MN	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG444MN	DNMG150616MN	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMG543MN	DNMG190612MN	5/8	15,88	.76	19,38	1/4	6,35	3/64	1,2	.250	6,35	
DNMG332MP	DNMG110408MP	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMG-MP
DNMG333MP	DNMG110412MP	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG431MP	DNMG150404MP	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432MP	DNMG150408MP	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433MP	DNMG150412MP	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG441MP	DNMG150604MP	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442MP	DNMG150608MP	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443MP	DNMG150612MP	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG332MS	DNMG110408MS	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMG-MS
DNMG333MS	DNMG110412MS	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG430MS	DNMG150401MS	1/2	12,70	.61	15,50	3/16	4,76	.004	0,1	.203	5,16	
DNMG4305MS	DNMG150402MS	1/2	12,70	.61	15,50	3/16	4,76	.008	0,2	.203	5,16	
DNMG431MS	DNMG150404MS	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMG432MS	DNMG150408MS	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433MS	DNMG150412MS	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG441MS	DNMG150604MS	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442MS	DNMG150608MS	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443MS	DNMG150612MS	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG432MW	DNMG150408MW	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMG-MW
DNMG433MW	DNMG150412MW	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG442MW	DNMG150608MW	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443MW	DNMG150612MW	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	

Order example:
ANSI catalog number: DNMG331FP
Insert grade: KT315

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
DNMG-P 	DNMG431P							●	●	●																		●	●										
	DNMG432P							●	●	●																		●	●										
	DNMG441P							●	●	●																		●	●										
	DNMG442P							●	●	●																		●	●										
	DNMG443P									●																			●										
DNMG-RN	DNMG432RN		●	●	●	●																																●
	DNMG433RN		●	●	●	●																																
	DNMG434RN		●	●	●	●																																
	DNMG442RN		●	●	●	●																																●
	DNMG443RN		●	●	●	●																																
	DNMG444RN		●	●	●	●																																
	DNMG542RN		●		●																																●
	DNMG543RN		●		●																																●
DNMG-RP 	DNMG332RP		●	●	●			●	●	●			●	●													●	●	●	●								●
	DNMG333RP		●	●	●			●	●	●			●	●													●	●	●	●								●
	DNMG432RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
	DNMG433RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
	DNMG434RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
	DNMG442RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
	DNMG443RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
	DNMG444RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●							●
DNMG-UN	DNMG332UN												●	●																								
	DNMG333UN												●	●																								
	DNMG432UN												●	●																								
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	DNMG434UN												●	●																								
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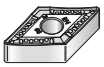
DNMM-RM 	DNMM432RM		●	●	●																																
	DNMM433RM		●	●	●																																
	DNMM434RM		●	●	●																																
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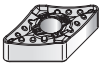
DNMM-RP 	DNMM442RP		●	●					●	●																			●	●								
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	DNMP433K		●	●																																
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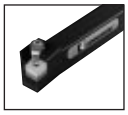
	DNMP443K		●	●																																

* Grade KC9140 available Spring 2005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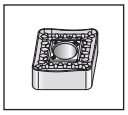
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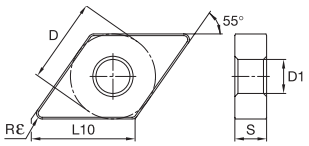
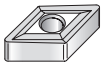
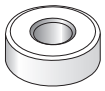
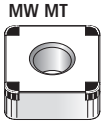


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DNMG431P	DNMG150404P	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	DNMG-P
DNMG432P	DNMG150408P	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG441P	DNMG150604P	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMG442P	DNMG150608P	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443P	DNMG150612P	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG432RN	DNMG150408RN	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMG-RN
DNMG433RN	DNMG150412RN	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG434RN	DNMG150416RN	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMG442RN	DNMG150608RN	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443RN	DNMG150612RN	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG444RN	DNMG150616RN	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMG542RN	DNMG190608RN	5/8	15,88	.76	19,38	1/4	6,35	1/32	0,8	.250	6,35	
DNMG543RN	DNMG190612RN	5/8	15,88	.76	19,38	1/4	6,35	3/64	1,2	.250	6,35	
DNMG332RP	DNMG110408RP	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMG-RP
DNMG333RP	DNMG110412RP	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG432RP	DNMG150408RP	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433RP	DNMG150412RP	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG434RP	DNMG150416RP	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMG442RP	DNMG150608RP	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443RP	DNMG150612RP	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG444RP	DNMG150616RP	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMG332UN	DNMG110408UN	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	DNMG-UN
DNMG333UN	DNMG110412UN	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMG432UN	DNMG150408UN	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMG433UN	DNMG150412UN	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMG434UN	DNMG150416UN	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMG442UN	DNMG150608UN	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMG443UN	DNMG150612UN	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMG444UN	DNMG150616UN	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMM432RM	DNMM150408RM	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMM-RM
DNMM433RM	DNMM150412RM	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMM434RM	DNMM150416RM	1/2	12,70	.61	15,50	3/16	4,76	1/16	1,6	.203	5,16	
DNMM442RM	DNMM150608RM	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMM443RM	DNMM150612RM	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMM444RM	DNMM150616RM	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMM442RP	DNMM150608RP	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	DNMM-RP
DNMM443RP	DNMM150612RP	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	
DNMM444RP	DNMM150616RP	1/2	12,70	.61	15,50	1/4	6,35	1/16	1,6	.203	5,16	
DNMP331K	DNMP110404K	3/8	9,53	.46	11,63	3/16	4,76	1/64	0,4	.150	3,81	DNMP-K
DNMP332K	DNMP110408K	3/8	9,53	.46	11,63	3/16	4,76	1/32	0,8	.150	3,81	
DNMP333K	DNMP110412K	3/8	9,53	.46	11,63	3/16	4,76	3/64	1,2	.150	3,81	
DNMP431K	DNMP150404K	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	.203	5,16	
DNMP432K	DNMP150408K	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	
DNMP433K	DNMP150412K	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	.203	5,16	
DNMP441K	DNMP150604K	1/2	12,70	.61	15,50	1/4	6,35	1/64	0,4	.203	5,16	
DNMP442K	DNMP150608K	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	.203	5,16	
DNMP443K	DNMP150612K	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	.203	5,16	

Order example:
ANSI catalog number: DNMG431P
Insert grade: KC5010

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S												H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
DNMS 	DNMS432																				●				●																	
	DNMS542																				●																					
RNGA 	RNGA32T0820																																			●						
	RNGA43T0820																																			●						
RNMA	RNMA43												●	●																												
	RNMA43E																		●																				●			
	RNMA43S0820																		●																				●			
	RNMA 83S0820																		●																				●			
RNMG-RN	RNMG32RN		●	●	●								●	●																										●	
	RNMG43RN		●	●	●								●	●																												●	
	RNMG54RN		●	●	●								●	●																													
	RNMG64RN		●	●	●								●	●																													
	RNMG86RN		●	●	●								●	●																													
RNMG-UN	RNMG43UN												●	●																													
SNGA	SNGA432S0820																		●															●								
	SNGA433S0820																		●															●								
	SNGA434S0820																		●															●								
SNGA-FW/ MW MT 	SNGA431EFWMT																																			●						
	SNGA431S0420FWMT																																			●						
	SNGA432EFWMT																																			●						
	SNGA432S0420FWMT																																			●						
	SNGA433EFWMT																																			●						
	SNGA433S0420FWMT																																			●						

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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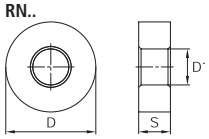

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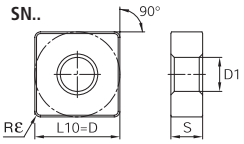
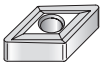
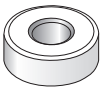


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DNMS432	DNMS150408	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	.203	5,16	DNMS
DNMS542	DNMS190608	5/8	15,88	.76	19,38	1/4	6,35	1/32	0,8	.250	6,35	
RNGA32T0820	RNGA090300T02020	3/8	9,53	-	-	1/8	3,18	-	-	.150	3,81	RNGA
RNGA43T0820	RNGA120400T02020	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	
RNMA43	RNMA120400	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	RNMA
RNMA43E	RNMA120400E	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	
RNMA43S0820	RNMA120400S02020	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	
RNMA83S0820	RNMA250400S02020	1	25,40	-	-	3/16	4,76	-	-	.359	9,12	
RNMG32RN	RNMG090300RN	3/8	9,53	-	-	1/8	3,18	-	-	.150	3,81	RNMG-RN
RNMG43RN	RNMG120400RN	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	
RNMG54RN	RNMG150600RN	5/8	15,88	-	-	1/4	6,35	-	-	.250	6,35	
RNMG64RN	RNMG190600RN	3/4	19,05	-	-	1/4	6,35	-	-	.313	7,93	
RNMG86RN	RNMG250900RN	1	25,40	-	-	3/8	9,53	-	-	.359	9,12	
RNMG43UN	RNMG120400UN	1/2	12,70	-	-	3/16	4,76	-	-	.203	5,16	RNMG-UN
SNGA432S0820	SNGA120408S02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNGA
SNGA433S0820	SNGA120412S02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA434S0820	SNGA120416S02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNGA431EFWMT	SNGA120404EFWMT	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	SNGA-FW/ MW MT
SNGA431S0420FWMT	SNGA120404S01020FWMT	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNGA432EFWMT	SNGA120408EFWMT	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA432S0420FWMT	SNGA120408S01020FWMT	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA433EFWMT	SNGA120412EFWMT	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA433S0420FWMT	SNGA120412S01020FWMT	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	

Order example:
ANSI catalog number: DNMS432
Insert grade: KC5410

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
SNGA-MT KB5625 KB9610	SNGA431EMT																																			●				
	SNGA431S0420MT																																			●				
	SNGA431S0425MT																																				●			
	SNGA432EMT																																			●				
	SNGA432S0420MT																																			●				
	SNGA432S0425MT																																				●			
	SNGA433EMT																																			●				
	SNGA433S0420MT																																			●				
	SNGA433S0425MT																																				●			
SNMS-E	SNMS432E																						●																		
SNMS-F	SNMS432F																							●																	
	SNMS433F																							●																	
SNGA	SNGA322T0820																																		●					
	SNGA432T0420														●																				●						
	SNGA432T0820															●	●	●																		●					
	SNGA433T0420														●																		●	●		●				
	SNGA433T0820															●	●	●																		●					
	SNGA434T0420														●																				●						
	SNGA434T0820															●	●	●																			●				
	SNGA543T0820															●	●	●																							
	SNGA544T0820															●	●	●																							
	SNGA643T0820																●	●																							
	SNGA644T0820																●	●																							
SNGG-FS	SNGG322FS																				●				●		●	●												
	SNGG432FS																				●				●		●	●												
SNGG-LF	SNGG322LF							●													●				●															
	SNGG432LF							●																																
	SNGG543LF							●																																

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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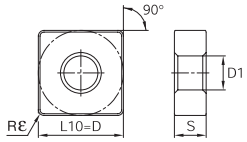

ANSI catalog number	ISO catalog number	D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
SNGA431EMT	SNGA120404EMT	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	SNGA-MT
SNGA431S0420MT	SNGA120404S01020MT	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNGA431S0425MT	SNGA120404S01025MT	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNGA432EMT	SNGA120408EMT	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA432S0420MT	SNGA120408S01020MT	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA432S0425MT	SNGA120408S01025MT	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA433EMT	SNGA120412EMT	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	KB5625
SNGA433S0420MT	SNGA120412S01020MT	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA433S0425MT	SNGA120412S01025MT	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	KB9610
SNMS432E	SNMS120408E	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMS-E
SNMS432F	SNMS120408F	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMS-F
SNMS433F	SNMS120412F	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA322T0820	SNGA090308T02020	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	SNGA
SNGA432T0420	SNGA120408T01020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA432T0820	SNGA120408T02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGA433T0420	SNGA120412T01020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA433T0820	SNGA120412T02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNGA434T0420	SNGA120416T01020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNGA434T0820	SNGA120416T02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNGA543T0820	SNGA150612T02020	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNGA544T0820	SNGA150616T02020	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNGA643T0820	SNGA190612T02020	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNGA644T0820	SNGA190616T02020	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNGG322FS	SNGG090308FS	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	SNGG-FS
SNGG432FS	SNGG120408FS	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGG322LF	SNGG090308LF	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	SNGG-LF
SNGG432LF	SNGG120408LF	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNGG543LF	SNGG150612LF	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	

Order example:
ANSI catalog number: SNGA431EMT
Insert grade: KB9610

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S										H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
SNGP	SNGP431							●														●																		
	SNGP432							●														●																		
SNMA	SNMA432												●	●																										
	SNMA432S0820																			●																		●		
	SNMA432T0820																	●																						
	SNMA433												●	●																										
	SNMA433E																			●																		●		
	SNMA433S0820																			●																		●		
	SNMA433T0820																	●																						
	SNMA434												●	●																										
	SNMA434S0820																			●																		●		
	SNMA434T0820																	●																						
	SNMA542												●	●																										
	SNMA543												●	●																										
	SNMA543T0820																	●																						
	SNMA544												●	●																										
	SNMA544T0820																	●																						
	SNMA643												●	●																										
	SNMA644												●	●																										
SNMA-MW	SNMA432S0820MW																			●																		●		
	SNMA433S0820MW																			●																		●		
SNMG-FF	SNMG321FF	●	●				●		●			●																●												
	SNMG322FF	●	●				●		●			●																●												
	SNMG431FF	●	●				●		●			●																●												
	SNMG432FF	●	●				●		●			●																●												
SNMG-FN	SNMG321FN	●	●	●			●					●	●																											
	SNMG322FN	●	●	●			●					●	●																											
	SNMG431FN	●	●	●			●					●	●																											
	SNMG432FN	●	●	●			●					●	●																											
	SNMG433FN	●	●	●			●					●	●																											
	SNMG434FN	●	●	●			●					●	●																											
SNMG-FP	SNMG431FP	●			●		●	●	●			●																●											●	
	SNMG432FP	●			●		●	●	●			●																●											●	
	SNMG433FP	●			●		●	●	●			●																●												

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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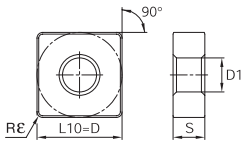
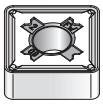
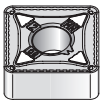
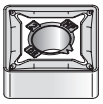
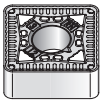


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
SNGP431	SNGP120404	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	SNGP
SNGP432	SNGP120408	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMA432	SNMA120408	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMA
SNMA432S0820	SNMA120408S02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMA432T0820	SNMA120408T02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMA433	SNMA120412	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMA433E	SNMA120412E	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMA433S0820	SNMA120412S02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMA433T0820	SNMA120412T02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMA434	SNMA120416	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMA434S0820	SNMA120416S02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMA434T0820	SNMA120416T02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMA542	SNMA150608	5/8	15,88	.63	15,88	1/4	6,35	1/32	0,8	.250	6,35	
SNMA543	SNMA150612	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMA543T0820	SNMA150612T02020	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMA544	SNMA150616	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMA544T0820	SNMA150616T02020	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMA643	SNMA190612	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMA644	SNMA190616	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMA432S0820MW	SNMA120408S02020MW	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMA-MW
SNMA433S0820MW	SNMA120412S02020MW	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG321FF	SNMG090304FF	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	.150	3,81	SNMG-FF
SNMG322FF	SNMG090308FF	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	
SNMG431FF	SNMG120404FF	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNMG432FF	SNMG120408FF	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMG321FN	SNMG090304FN	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	.150	3,81	SNMG-FN
SNMG322FN	SNMG090308FN	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	
SNMG431FN	SNMG120404FN	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNMG432FN	SNMG120408FN	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMG433FN	SNMG120412FN	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434FN	SNMG120416FN	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG431FP	SNMG120404FP	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	SNMG-FP
SNMG432FP	SNMG120408FP	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMG433FP	SNMG120412FP	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	

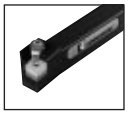
Order example:
ANSI catalog number: SNGP431
Insert grade: KC5010

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K										N				S								H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
SNMG-FW	**SNMG432FW**	●	●				●		●			●																	●											
	**SNMG433FW**	●	●				●		●			●																	●											
SNMG-MN	**SNMG321MN**		●	●	●	●																																		
	**SNMG322MN**		●	●	●	●																																		
	SNMG323MN		●	●	●	●																																		
	SNMG431MN		●	●	●	●																																	●	
	SNMG432MN		●	●	●	●																																	●	
	SNMG433MN		●	●	●	●																																	●	
	SNMG434MN		●	●	●	●																																	●	
	SNMG543MN		●	●	●	●																																		
	SNMG544MN		●	●	●	●																																		
	SNMG643MN		●	●	●	●																																		
	SNMG644MN		●	●	●	●																																		
SNMG-MP	**SNMG432MP**				●			●	●	●	●																		●	●	●								●	●
	**SNMG433MP**				●			●	●	●	●																		●	●	●								●	●
	SNMG434MP				●			●	●	●	●																		●	●	●								●	●
	SNMG542MP				●			●	●	●	●																		●	●	●									
	SNMG543MP				●			●	●	●	●																		●	●	●									
	SNMG544MP				●			●	●	●	●																		●	●	●									
	SNMG643MP				●			●	●	●	●																		●	●	●									
	SNMG644MP				●			●	●	●	●																		●	●	●									
SNMG-MS	**SNMG432MS**																				●				●		●	●												
	SNMG433MS																				●				●		●	●												
	SNMG542MS																				●				●		●	●												
	SNMG543MS																				●				●		●	●												
	SNMG643MS																				●				●		●	●												
SNMG-MW	**SNMG432MW**		●	●	●					●			●																●											
	SNMG433MW		●	●	●					●			●																●											
SNMG-P	**SNMG432P**							●	●	●																			●	●										
	SNMG433P							●	●	●																			●	●										
	SNMG643P								●	●																			●	●										
	SNMG644P								●	●																			●	●										
SNMG-RN	**SNMG333RN**		●		●																																			
	**SNMG432RN**		●	●	●	●																																	●	
	SNMG433RN		●	●	●	●																																	●	
	SNMG434RN		●	●	●	●																																	●	
	SNMG542RN		●	●	●	●																																		
	SNMG543RN		●	●	●	●																																		

* Grade KC9140 available Spring 2005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A204-A209

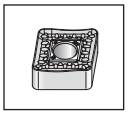
A239-A241

A248-A251

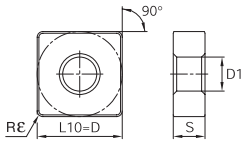
A6-A19

A26-A27

A28-A32


A33-A37

SN..

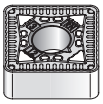
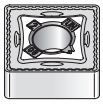
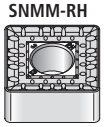
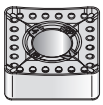


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
SNMG432FW	SNMG120408FW	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-FW
SNMG433FW	SNMG120412FW	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG321MN	SNMG090304MN	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	.150	3,81	SNMG-MN
SNMG322MN	SNMG090308MN	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	.150	3,81	
SNMG323MN	SNMG090312MN	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	.150	3,81	
SNMG431MN	SNMG120404MN	1/2	12,70	.50	12,70	3/16	4,76	1/64	0,4	.203	5,16	
SNMG432MN	SNMG120408MN	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMG433MN	SNMG120412MN	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434MN	SNMG120416MN	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG543MN	SNMG150612MN	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMG544MN	SNMG150616MN	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMG643MN	SNMG190612MN	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644MN	SNMG190616MN	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMG432MP	SNMG120408MP	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-MP
SNMG433MP	SNMG120412MP	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434MP	SNMG120416MP	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG542MP	SNMG150608MP	5/8	15,88	.63	15,88	1/4	6,35	1/32	0,8	.250	6,35	
SNMG543MP	SNMG150612MP	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMG544MP	SNMG150616MP	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMG643MP	SNMG190612MP	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644MP	SNMG190616MP	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMG432MS	SNMG120408MS	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-MS
SNMG433MS	SNMG120412MS	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG542MS	SNMG150608MS	5/8	15,88	.63	15,88	1/4	6,35	1/32	0,8	.250	6,35	
SNMG543MS	SNMG150612MS	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMG643MS	SNMG190612MS	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG432MW	SNMG120408MW	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-MW
SNMG433MW	SNMG120412MW	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG432P	SNMG120408P	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-P
SNMG433P	SNMG120412P	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG643P	SNMG190612P	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644P	SNMG190616P	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMG333RN	SNMG090412RN	3/8	9,53	.38	9,53	3/16	4,76	3/64	1,2	.150	3,81	SNMG-RN
SNMG432RN	SNMG120408RN	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	
SNMG433RN	SNMG120412RN	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434RN	SNMG120416RN	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG542RN	SNMG150608RN	5/8	15,88	.63	15,88	1/4	6,35	1/32	0,8	.250	6,35	
SNMG543RN	SNMG150612RN	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	

Order example:
ANSI catalog number: SNMG432FW
Insert grade: KT315

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
SNMG-RN 	SNMG544RN		●	●	●	●																																		●
	SNMG642RN		●	●	●	●																																		●
	SNMG643RN		●	●	●	●																																		●
	SNMG644RN		●	●	●	●																																		●
	SNMG646RN		●	●	●	●																																		
SNMG-RP	SNMG432RP		●	●	●		●	●	●	●		●	●														●	●	●	●	●									●
	SNMG433RP		●	●	●		●	●	●	●		●	●														●	●	●	●	●									●
	SNMG434RP		●	●	●		●	●	●	●		●	●														●	●	●	●	●									
	SNMG543RP		●	●	●		●	●	●	●	●	●	●														●	●	●	●	●									●
	SNMG544RP		●	●	●		●	●	●	●	●	●	●														●	●	●	●	●									●
	SNMG643RP		●	●	●		●	●	●	●	●	●	●														●	●	●	●	●									●
	SNMG644RP		●	●	●		●	●	●	●	●	●	●														●	●	●	●	●									●
SNMG-UN 	SNMG432UN												●	●																										
	SNMG433UN												●	●																										
	SNMG434UN												●	●																										
	SNMG542UN												●	●																										
	SNMG543UN												●	●																										
	SNMG544UN												●	●																										
	SNMG643UN												●	●																										
	SNMG644UN												●	●																										
SNMM-RH 	SNMM643RH		●	●	●	●																																
	SNMM644RH		●	●	●	●																																		
	SNMM646RH		●	●	●	●																																		
	SNMM856RH		●	●	●	●																																		
	SNMM858RH		●	●	●	●																																		
	SNMM866RH		●	●	●	●																																		
	SNMM868RH					●																																		
SNMM-RM	SNMM432RM		●	●	●																																		
	SNMM433RM		●	●	●																																			
	SNMM434RM		●	●	●																																			
	SNMM543RM		●	●	●																																			
	SNMM544RM		●	●	●																																			
	SNMM643RM		●	●	●																																			
	SNMM644RM		●	●	●																																			
	SNMM646RM		●	●	●																																			
	SNMM856RM		●	●	●																																			
	SNMM866RM		●	●	●																																			
SNMM-RP 	SNMM432RP		●	●					●	●																		●	●										
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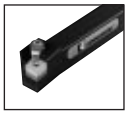
	SNMM434RP		●	●					●	●																		●	●										
	SNMM543RP		●	●					●	●																		●	●										
	SNMM544RP		●	●					●	●																		●	●										
	SNMM643RP		●	●					●	●																		●	●										
	SNMM644RP		●	●					●	●																		●	●										
	SNMM646RP		●	●					●	●																		●	●										
	SNMM856RP			●						●																			●										
	SNMM866RP			●						●																			●										

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

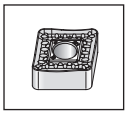
A239-A241

A248-A251

A6-A19

A26-A27

A28-A32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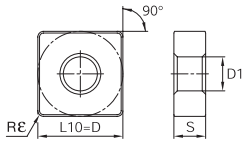
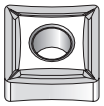
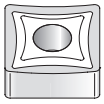


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	RE inch	RE mm	D1 inch	D1 mm	
SNMG544RN	SNMG150616RN	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	SNMG-RN
SNMG642RN	SNMG190608RN	3/4	19,05	.75	19,05	1/4	6,35	1/32	0,8	.313	7,93	
SNMG643RN	SNMG190612RN	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644RN	SNMG190616RN	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMG646RN	SNMG190624RN	3/4	19,05	.75	19,05	1/4	6,35	3/32	2,4	.313	7,93	
SNMG432RP	SNMG120408RP	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-RP
SNMG433RP	SNMG120412RP	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434RP	SNMG120416RP	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG543RP	SNMG150612RP	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMG544RP	SNMG150616RP	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMG643RP	SNMG190612RP	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644RP	SNMG190616RP	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMG432UN	SNMG120408UN	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMG-UN
SNMG433UN	SNMG120412UN	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMG434UN	SNMG120416UN	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMG542UN	SNMG150608UN	5/8	15,88	.63	15,88	1/4	6,35	1/32	0,8	.250	6,35	
SNMG543UN	SNMG150612UN	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMG544UN	SNMG150616UN	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMG643UN	SNMG190612UN	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMG644UN	SNMG190616UN	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMM643RH	SNMM190612RH	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	SNMM-RH
SNMM644RH	SNMM190616RH	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMM646RH	SNMM190624RH	3/4	19,05	.75	19,05	1/4	6,35	3/32	2,4	.313	7,93	
SNMM856RH	SNMM250724RH	1	25,40	1.00	25,40	5/16	7,94	3/32	2,4	.359	9,12	
SNMM858RH	SNMM250732RH	1	25,40	1.00	25,40	5/16	7,94	1/8	3,2	.359	9,12	
SNMM866RH	SNMM250924RH	1	25,40	1.00	25,40	3/8	9,53	3/32	2,4	.359	9,12	
SNMM868RH	SNMM250932RH	1	25,40	1.00	25,40	3/8	9,53	1/8	3,2	.359	9,12	
SNMM432RM	SNMM120408RM	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMM-RM
SNMM433RM	SNMM120412RM	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMM434RM	SNMM120416RM	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMM543RM	SNMM150612RM	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMM544RM	SNMM150616RM	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMM643RM	SNMM190612RM	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMM644RM	SNMM190616RM	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMM646RM	SNMM190624RM	3/4	19,05	.75	19,05	1/4	6,35	3/32	2,4	.313	7,93	
SNMM856RM	SNMM250724RM	1	25,40	1.00	25,40	5/16	7,94	3/32	2,4	.359	9,12	
SNMM866RM	SNMM250924RM	1	25,40	1.00	25,40	3/8	9,53	3/32	2,4	.359	9,12	
SNMM432RP	SNMM120408RP	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMM-RP
SNMM433RP	SNMM120412RP	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMM434RP	SNMM120416RP	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	.203	5,16	
SNMM543RP	SNMM150612RP	5/8	15,88	.63	15,88	1/4	6,35	3/64	1,2	.250	6,35	
SNMM544RP	SNMM150616RP	5/8	15,88	.63	15,88	1/4	6,35	1/16	1,6	.250	6,35	
SNMM643RP	SNMM190612RP	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
SNMM644RP	SNMM190616RP	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	.313	7,93	
SNMM646RP	SNMM190624RP	3/4	19,05	.75	19,05	1/4	6,35	3/32	2,4	.313	7,93	
SNMM856RP	SNMM250724RP	1	25,40	1.00	25,40	5/16	7,94	3/32	2,4	.359	9,12	
SNMM866RP	SNMM250924RP	1	25,40	1.00	25,40	3/8	9,53	3/32	2,4	.359	9,12	

Order example:
ANSI catalog number: SNMG544RN
Insert grade: KC9110

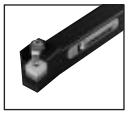
KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S										H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
SNMM-RW	**SNMM646RW**	●	●	●	●																																			
	SNMM856RW	●	●	●	●																																			
SNMP-K 	**SNMP432K**	●	●																																					
	SNMP433K	●	●																																					
SNMS 	**SNMS432**																					●				●															
	SNMS433																					●																			
	SNMS643																					●				●															
TNGA	**TNGA331S0820**																	●															●							
	TNGA332S0820																	●															●							
	TNGA333S0820																	●															●							
TNGA-FW/ MW MT	**TNGA331EFWMT**																																			●				
	TNGA331S0420FWMT																																			●				
	TNGA332EFWMT																																			●	●			
	TNGA332S0420FWMT																																			●				
	TNGA333EFWMT																																			●	●			
	TNGA333S0420FWMT																																			●				
TNGA-MT	**TNGA331EMT**																																			●				
	TNGA331S0420MT																																			●				
	TNGA331S0425MT																																				●			
	TNGA332EMT																																			●				
	TNGA332S0420MT																																			●				
	TNGA332S0425MT																																				●			
	TNGA333EMT																																			●				
	TNGA333S0420MT																																			●				
	TNGA333S0425MT																																				●			
TNMA	**TNMA332S0420**																	●															●							
	TNMA432S0420																	●															●							
TNMS-E	**TNMS331E**																						●																	
	TNMS332E																						●																	

TURNING HOLDERS

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

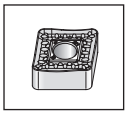
A239-A241

A248-A251

A6-A19

A26-A27

A28-A32


A33-A37

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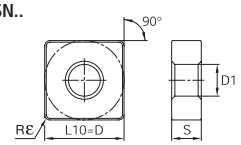

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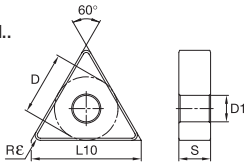

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
SNMM646RW	SNMM190624RW	3/4	19,05	.75	19,05	1/4	6,35	3/32	2,4	.313	7,93	SNMM-RW
SNMM856RW	SNMM250724RW	1	25,40	1.00	25,40	5/16	7,94	3/32	2,4	.359	9,12	
SNMP432K	SNMP120408K	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMP-K
SNMP433K	SNMP120412K	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMS432	SNMS120408	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	.203	5,16	SNMS
SNMS433	SNMS120412	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	.203	5,16	
SNMS643	SNMS190612	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	.313	7,93	
TNGA331S0820	TNGA160404S02020	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNGA
TNGA332S0820	TNGA160408S02020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA333S0820	TNGA160412S02020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA331EFWMT	TNGA160404EFWMT	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNGA-FW/ MW MT
TNGA331S0420FWMT	TNGA160404S01020FWMT	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGA332EFWMT	TNGA160408EFWMT	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA332S0420FWMT	TNGA160408S01020FWMT	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA333EFWMT	TNGA160412EFWMT	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA333S0420FWMT	TNGA160412S01020FWMT	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA331EMT	TNGA160404EMT	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNGA-MT
TNGA331S0420MT	TNGA160404S01020MT	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGA331S0425MT	TNGA160404S01025MT	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGA332EMT	TNGA160408EMT	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA332S0420MT	TNGA160408S01020MT	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA332S0425MT	TNGA160408S01025MT	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA333EMT	TNGA160412EMT	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA333S0420MT	TNGA160412S01020MT	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA333S0425MT	TNGA160412S01025MT	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMA332S0420	TNMA160408S01020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMA
TNMA432S0420	TNMA220408S01020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMS331E	TNMS160404E	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMS-E
TNMS332E	TNMS160408E	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	

Order example:
ANSI catalog number: SNMM646RW
Insert grade: KC9110

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S											H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
TNMS-F	TNMS331F																							●																	
	TNMS332F																							●																	
	TNMS431F																							●																	
	TNMS432F																							●																	
	TNMS433F																							●																	
TNGA	TNGA322T0820																																			●					
	TNGA323T0820																																			●					
	TNGA331														●																				●						
	TNGA331T0420														●																				●						
	TNGA332														●																				●						
	TNGA332T0420														●																				●						
	TNGA332T0820															●	●	●																		●					
	TNGA333														●																				●						
	TNGA333T0420														●																				●						
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	TNGA432T0420														●																			●	●						
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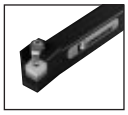
	TNGA542T0820																																			●					
	TNGA543T0820																																			●					
TNGG-FS	TNGG3305FS																				●				●		●	●												
	TNGG331FS																				●				●		●	●												
	TNGG332FS																				●				●		●	●												
	TNGG432FS																				●				●		●	●												
	TNGG433FS																				●				●		●	●												
TNGG-LF	TNGG3305LF							●													●				●															
	TNGG331LF							●																																
	TNGG332LF							●																																
TNGP	TNGP3305							●														●																	
	TNGP331							●														●																	
	TNGP332							●														●																	
TNMA	TNMA332												●	●																										
	TNMA333												●	●																										
	TNMA334												●	●																										
	TNMA432												●	●																										
	TNMA433												●	●																										
	TNMA434												●	●																										
	TNMA544												●	●																										

* Grade KC9140 available Spring 2005


A152-A171

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A239-A241

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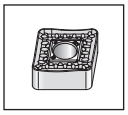
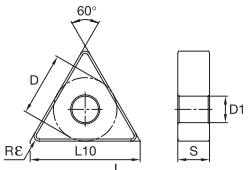
A6-A19

A26-A27

A28-A32


A33-A37

TN..

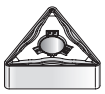


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TNMS331F	TNMS160404F	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMS-F
TNMS332F	TNMS160408F	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMS431F	TNMS220404F	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMS432F	TNMS220408F	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMS433F	TNMS220412F	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNGA322T0820	TNGA160308T02020	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	.150	3,81	TNGA
TNGA323T0820	TNGA160312T02020	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	.150	3,81	
TNGA331	TNGA160404E	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGA331T0420	TNGA160404T01020	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGA332	TNGA160408E	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA332T0420	TNGA160408T01020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA332T0820	TNGA160408T02020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGA333	TNGA160412E	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA333T0420	TNGA160412T01020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA333T0820	TNGA160412T02020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNGA334T0820	TNGA160416T02020	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	.150	3,81	
TNGA432T0420	TNGA220408T01020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNGA432T0820	TNGA220408T02020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNGA433T0420	TNGA220412T01020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNGA433T0820	TNGA220412T02020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNGA434T0420	TNGA220416T01020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNGA434T0820	TNGA220416T02020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNGA542T0820	TNGA270608T02020	5/8	15,88	1.08	27,50	1/4	6,35	1/32	0,8	.250	6,35	
TNGA543T0820	TNGA270612T02020	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNGG3305FS	TNGG160402FS	3/8	9,53	.65	16,50	3/16	4,76	.008	0,2	.150	3,81	TNGG-FS
TNGG331FS	TNGG160404FS	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGG332FS	TNGG160408FS	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGG432FS	TNGG220408FS	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNGG433FS	TNGG220412FS	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNGG3305LF	TNGG160402LF	3/8	9,53	.65	16,50	3/16	4,76	.008	0,2	.150	3,81	TNGG-LF
TNGG331LF	TNGG160404LF	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGG332LF	TNGG160408LF	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNGP3305	TNGP160402	3/8	9,53	.65	16,50	3/16	4,76	.008	0,2	.150	3,81	TNGP
TNGP331	TNGP160404	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNGP332	TNGP160408	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMA332	TNMA160408	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMA
TNMA333	TNMA160412	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMA334	TNMA160416	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	.150	3,81	
TNMA432	TNMA220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMA433	TNMA220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMA434	TNMA220416	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMA544	TNMA270616	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	

Order example:
ANSI catalog number: TNMS331F
Insert grade: KD100

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K										N				S								H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
TNMA-T	TNMA433T0820																●																						
	TNMA434T0820																●																						
TNMG-CT	TNMG432CT		●	●				●	●	●			●															●	●										
	TNMG433CT		●	●				●	●	●			●															●	●										
TNMG-FF 	TNMG221FF	●	●				●	●	●			●																●											
	TNMG222FF	●	●				●	●	●			●																●											
	TNMG331FF	●	●				●	●	●			●																●											
	TNMG332FF	●	●				●	●	●			●																●											
TNMG-FN	TNMG221FN	●	●	●			●					●	●																										
	TNMG222FN	●	●	●			●					●	●																										
	TNMG331FN	●	●	●			●					●	●																										
	TNMG332FN	●	●	●			●					●	●																										
	TNMG333FN	●	●	●			●					●	●																										
	TNMG431FN	●	●	●			●					●	●																										
	TNMG432FN	●	●	●			●					●																											
	TNMG433FN	●	●	●			●					●																											
TNMG-FP	TNMG331FP	●			●		●	●	●			●																●										●	
	TNMG332FP	●			●		●	●	●			●																●										●	
	TNMG333FP	●			●		●	●	●			●																●											
	TNMG431FP	●			●		●	●	●			●																●										●	
	TNMG432FP	●			●		●	●	●			●																●										●	
TNMG-FW	TNMG331FW	●	●				●	●	●			●	●																●											
	TNMG332FW	●	●				●	●	●			●	●																●											
	TNMG333FW	●	●				●	●	●			●	●																●											
TNMG-MN	TNMG331MN		●	●	●	●																															●	
	TNMG332MN		●	●	●	●																															●	
	TNMG333MN		●	●	●	●																															●	
	TNMG431MN		●	●	●	●																															●	
	TNMG432MN		●	●	●	●																															●	
	TNMG433MN		●	●	●	●																															●	
	TNMG434MN		●	●	●	●																																
TNMG-MP	TNMG331MP				●			●	●	●	●																	●	●	●								●	●
	TNMG332MP				●			●	●	●	●																	●	●	●								●	●
	TNMG333MP				●			●	●	●	●																	●	●	●								●	●
	TNMG432MP				●			●	●	●	●																	●	●	●								●	●
	TNMG433MP				●			●	●	●	●																	●	●	●								●	●
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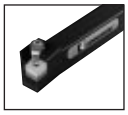
* Grade KC9140 available Spring 2005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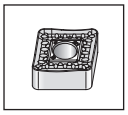
A26-A27

A28-A32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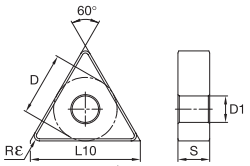
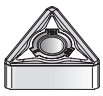
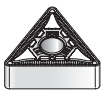


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TNMA433T0820	TNMA220412T02020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	TNMA-T
TNMA434T0820	TNMA220416T02020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMG432CT	TNMG220408CT	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	TNMG-CT
TNMG433CT	TNMG220412CT	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG221FF	TNMG110304FF	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	.091	2,30	TNMG-FF
TNMG222FF	TNMG110308FF	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	.091	2,30	
TNMG331FF	TNMG160404FF	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNMG332FF	TNMG160408FF	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG221FN	TNMG110304FN	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	.091	2,30	TNMG-FN
TNMG222FN	TNMG110308FN	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	.091	2,30	
TNMG331FN	TNMG160404FN	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNMG332FN	TNMG160408FN	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG333FN	TNMG160412FN	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG431FN	TNMG220404FN	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMG432FN	TNMG220408FN	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433FN	TNMG220412FN	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG331FP	TNMG160404FP	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMG-FP
TNMG332FP	TNMG160408FP	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG333FP	TNMG160412FP	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG431FP	TNMG220404FP	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMG432FP	TNMG220408FP	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG331FW	TNMG160404FW	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMG-FW
TNMG332FW	TNMG160408FW	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG333FW	TNMG160412FW	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG331MN	TNMG160404MN	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMG-MN
TNMG332MN	TNMG160408MN	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG333MN	TNMG160412MN	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG431MN	TNMG220404MN	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMG432MN	TNMG220408MN	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433MN	TNMG220412MN	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434MN	TNMG220416MN	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMG331MP	TNMG160404MP	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMG-MP
TNMG332MP	TNMG160408MP	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG333MP	TNMG160412MP	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG432MP	TNMG220408MP	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433MP	TNMG220412MP	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434MP	TNMG220416MP	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	

Order example:
ANSI catalog number: TNMA433T0820
Insert grade: KY3500

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
TNMG-MS	TNMG3305MS																				●				●		●	●												
	TNMG331MS																				●				●		●	●												
	TNMG332MS																				●				●		●	●												
	TNMG431MS																				●				●		●	●												
	TNMG432MS																				●				●		●	●												
	TNMG433MS																				●				●		●	●												
	TNMG542MS																				●				●		●	●												
	TNMG543MS																				●				●		●	●												
	TNMG544MS																				●				●		●	●												
TNMG-MW 	TNMG332MW		●	●	●				●	●			●	●															●	●										
	TNMG333MW		●	●	●				●	●			●	●															●	●										
TNMG-P	TNMG331P							●	●	●																			●	●										
	TNMG332P							●	●	●																			●	●										
	TNMG431P							●	●	●																			●	●										
	TNMG432P							●	●	●																			●	●										
	TNMG433P							●		●																				●										
	TNMG434P									●																				●										
	TNMG543P									●																				●										
TNMG-RN 	TNMG332RN		●	●	●	●																																●
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	TNMG432RN		●	●	●	●																																●
	TNMG433RN		●	●	●	●																																●
	TNMG434RN		●	●	●	●																																
	TNMG542RN		●	●	●	●																																●
	TNMG543RN		●	●	●	●																																
	TNMG544RN		●	●	●	●																																●
	TNMG666RN		●	●	●	●																																●
TNMG-RP	TNMG332RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								●
	TNMG333RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								●
	TNMG334RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								●
	TNMG432RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								●
	TNMG433RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								●
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	TNMG438RP		●	●	●				●	●	●		●	●													●	●	●	●	●								
	TNMG543RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								
	TNMG544RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								
	TNMG666RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●								
TNMG-UN	TNMG332UN												●	●																								
	TNMG333UN												●	●																								
	TNMG334UN												●	●																								
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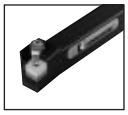
	TNMG434UN												●	●																								

* Grade KC9140 available Spring 2005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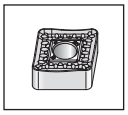
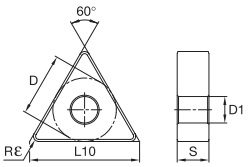
A26-A27

A28-A32


A33-A37

TN..

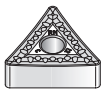
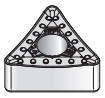
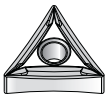
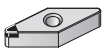
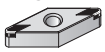


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TNMG3305MS	TNMG160402MS	3/8	9,53	.65	16,50	3/16	4,76	.008	0,2	.150	3,81	TNMG-MS
TNMG331MS	TNMG160404MS	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	
TNMG332MS	TNMG160408MS	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG431MS	TNMG220404MS	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMG432MS	TNMG220408MS	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433MS	TNMG220412MS	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG542MS	TNMG270608MS	5/8	15,88	1.08	27,50	1/4	6,35	1/32	0,8	.250	6,35	
TNMG543MS	TNMG270612MS	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMG544MS	TNMG270616MS	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	
TNMG332MW	TNMG160408MW	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMG-MW
TNMG333MW	TNMG160412MW	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG331P	TNMG160404P	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMG-P
TNMG332P	TNMG160408P	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMG431P	TNMG220404P	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMG432P	TNMG220408P	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433P	TNMG220412P	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434P	TNMG220416P	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMG543P	TNMG270612P	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMG332RN	TNMG160408RN	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMG-RN
TNMG333RN	TNMG160412RN	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG432RN	TNMG220408RN	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433RN	TNMG220412RN	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434RN	TNMG220416RN	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMG542RN	TNMG270608RN	5/8	15,88	1.08	27,50	1/4	6,35	1/32	0,8	.250	6,35	
TNMG543RN	TNMG270612RN	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMG544RN	TNMG270616RN	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	
TNMG666RN	TNMG330924RN	3/4	19,05	1.30	33,00	3/8	9,53	3/32	2,4	.313	7,93	
TNMG332RP	TNMG160408RP	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMG-RP
TNMG333RP	TNMG160412RP	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG334RP	TNMG160416RP	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	.150	3,81	
TNMG432RP	TNMG220408RP	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433RP	TNMG220412RP	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434RP	TNMG220416RP	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMG438RP	TNMG220432RP	1/2	12,70	.87	22,00	3/16	4,76	1/8	3,2	.203	5,16	
TNMG543RP	TNMG270612RP	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMG544RP	TNMG270616RP	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	
TNMG666RP	TNMG330924RP	3/4	19,05	1.30	33,00	3/8	9,53	3/32	2,4	.313	7,93	
TNMG332UN	TNMG160408UN	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMG-UN
TNMG333UN	TNMG160412UN	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMG334UN	TNMG160416UN	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	.150	3,81	
TNMG432UN	TNMG220408UN	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMG433UN	TNMG220412UN	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMG434UN	TNMG220416UN	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	

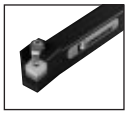
Order example:
ANSI catalog number: TNMG3305MS
Insert grade: K313

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC9110	P KC9125	P KC8050	P KC9040/KC9140*	M KT315	M KC5010	M KC9225	M KC9240	M KC9245	K KT315	K KC9315	K KC9325	K KY4400	K KY1310	K KY3400	K KY3500	K KD120	K KB9640	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5510	S KC5525	S KC9225	S KC9240	S KC9245	S KY2100	S KY1540	S KD120	H KY4400	H KY1615	H KB9610	H KB5625	H KB9640	KENNA UNIVERSAL KU10T	KU30T
TNMM-RM 	TNMM332RM		●	●	●																	●																		
	TNMM333RM		●	●	●																	●																		
	TNMM432RM		●	●	●																	●																		
	TNMM433RM		●	●	●																	●																		
	TNMM434RM		●	●	●																	●																		
	TNMM543RM		●	●	●																	●																		
	TNMM544RM		●	●	●																	●																		
TNMM-RP 	TNMM332RP		●	●					●	●																			●	●										
	TNMM333RP		●	●					●	●																			●	●										
	TNMM334RP		●	●					●	●																			●	●										
	TNMM432RP		●	●					●	●																			●	●										
	TNMM433RP		●	●					●	●																			●	●										
	TNMM434RP		●	●					●	●																			●	●										
	TNMM543RP			●					●	●																			●	●										
	TNMM544RP			●					●	●																			●	●										
TNMP	TNMP432																					●																		
	TNMP433																					●																		
TNMP-K 	TNMP331K		●	●																																			
	TNMP332K		●	●																																			
	TNMP431K		●	●																																			
	TNMP432K		●	●																																			
TNMS	TNMS331																					●				●													
	TNMS332																					●				●													
	TNMS431																					●				●													
	TNMS432																					●				●													
	TNMS433																					●				●													
	TNMS542																					●				●													
	TNMS543																					●																	
VNGA 	VNGA332																	●					●										●						
	VNGA332E																	●					●										●						
	VNGA432																	●					●										●						
VNGA-MT 	VNGA331S0420MT																																			●				
	VNGA331S0425MT																																			●				
	VNGA332S0420MT																																			●				
	VNGA332S0425MT																																			●				
	VNGA333S0420MT																																			●				

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

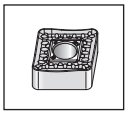
A239-A241

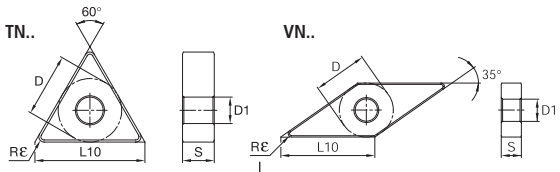
A248-A251

A6-A19

A26-A27

A28-A32


A33-A37



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TNMM332RM	TNMM160408RM	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	TNMM-RM
TNMM333RM	TNMM160412RM	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	.150	3,81	
TNMM432RM	TNMM220408RM	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMM433RM	TNMM220412RM	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMM434RM	TNMM220416RM	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	.203	5,16	
TNMM543RM	TNMM270612RM	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMM544RM	TNMM270616RM	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	
TNMM332RP	TNMM160408RP	3/8	9,53	.64	16,36	3/16	4,76	1/32	0,8	.150	3,81	TNMM-RP
TNMM333RP	TNMM160412RP	3/8	9,53	.64	16,36	3/16	4,76	3/64	1,2	.150	3,81	
TNMM334RP	TNMM160416RP	3/8	9,53	.64	16,36	3/16	4,76	1/16	1,6	.150	3,81	
TNMM432RP	TNMM220408RP	1/2	12,70	.86	21,89	3/16	4,76	1/32	0,8	.203	5,16	
TNMM433RP	TNMM220412RP	1/2	12,70	.86	21,89	3/16	4,76	3/64	1,2	.203	5,16	
TNMM434RP	TNMM220416RP	1/2	12,70	.86	21,89	3/16	4,76	1/16	1,6	.203	5,16	
TNMM543RP	TNMM270612RP	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
TNMM544RP	TNMM270616RP	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	.250	6,35	
TNMP432	TNMP220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	TNMP
TNMP433	TNMP220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMP331K	TNMP160404K	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMP-K
TNMP332K	TNMP160408K	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMP431K	TNMP220404K	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMP432K	TNMP220408K	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMS331	TNMS160404	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	.150	3,81	TNMS
TNMS332	TNMS160408	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	.150	3,81	
TNMS431	TNMS220404	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	.203	5,16	
TNMS432	TNMS220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	.203	5,16	
TNMS433	TNMS220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	.203	5,16	
TNMS542	TNMS270608	5/8	15,88	1.08	27,50	1/4	6,35	1/32	0,8	.250	6,35	
TNMS543	TNMS270612	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	.250	6,35	
VNGA332	VNGA160408	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNGA
VNGA332E	VNGA160408E	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA432	VNGA220408	1/2	12,70	.87	22,14	3/16	4,76	1/32	0,8	.203	5,16	
VNGA331S0420MT	VNGA160404S01020MT	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNGA-MT
VNGA331S0425MT	VNGA160404S01025MT	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	
VNGA332S0420MT	VNGA160408S01020MT	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA332S0425MT	VNGA160408S01025MT	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA333S0420MT	VNGA160412S01020MT	3/8	9,53	.65	16,61	3/16	4,76	3/64	1,2	.150	3,81	

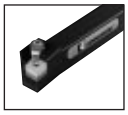
Order example:
ANSI catalog number: TNMM332RM
Insert grade: KC9110

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P: KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	M: KT315	KC5010	KC9225	KC9240	KC9245	K: KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	N: K313	KC5410	KD1405	KD100	S: K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	H: KY4400	KY1615	KB9610	KB5625	KB9640	KENNA UNIVERSAL: KU10T	KU30T
VNMA	**VNMA332S0420**																		●															●							
VNMS-E	**VNMS331E**																						●																		
	VNMS332E																						●																		
VNMS-F	**VNMS331F**																							●																	
	VNMS332F																							●																	
VNGA	**VNGA331T0420**														●																			●						
	VNGA331T0820																																		●					
	VNGA332T0420														●																			●						
	VNGA332T0820																	●																	●					
	VNGA333T0820																																		●					
	VNGA432T0820																●																		●					
	VNGA433T0820																●																		●					
	VNGA434T0820																●																		●					
VNGG-FS	**VNGG330FS**																				●				●		●	●											
	VNGG3305FS																				●				●		●	●											
	VNGG331FS																				●				●		●	●											
	VNGG332FS																				●				●		●	●											
	VNGG333FS																				●				●		●	●											
VNGG-LF	**VNGG3305LF**							●													●				●														
	VNGG331LF							●													●				●														
	VNGG332LF							●													●				●														
	VNGG432LF							●																																
VNGP	**VNGP330**							●													●	●			●														
	VNGP3305							●														●																	
	VNGP431							●																																
	VNGP432							●													●				●														
VNMA	**VNMA332**												●	●																										

* Grade KC9140 available Spring 2005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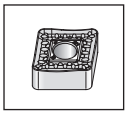
A239-A241

A248-A251

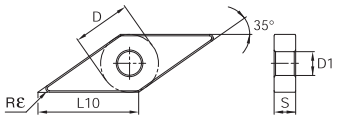
A6-A19

A26-A27

A28-A32


A33-A37

VN..

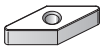
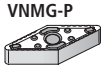


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
VNMA332S0420	VNMA160408S01020	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNMA
VNMS331E	VNMS160404E	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNMS-E
VNMS332E	VNMS160408E	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNMS331F	VNMS160404F	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNMS-F
VNMS332F	VNMS160408F	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA331T0420	VNGA160404T01020	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNGA
VNGA331T0820	VNGA160404T02020	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	
VNGA332T0420	VNGA160408T01020	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA332T0820	VNGA160408T02020	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGA333T0820	VNGA160412T02020	3/8	9,53	.65	16,61	3/16	4,76	3/64	1,2	.150	3,81	
VNGA432T0820	VNGA220408T02020	1/2	12,70	.87	22,14	3/16	4,76	1/32	0,8	.203	5,16	
VNGA433T0820	VNGA220412T02020	1/2	12,70	.87	22,14	3/16	4,76	3/64	1,2	.203	5,16	
VNGA434T0820	VNGA220416T02020	1/2	12,70	.87	22,14	3/16	4,76	1/16	1,6	.203	5,16	
VNGG330FS	VNGG160401FS	3/8	9,53	.65	16,61	3/16	4,76	.004	0,1	.150	3,81	VNGG-FS
VNGG3305FS	VNGG160402FS	3/8	9,53	.65	16,61	3/16	4,76	.008	0,2	.150	3,81	
VNGG331FS	VNGG160404FS	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	
VNGG332FS	VNGG160408FS	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGG333FS	VNGG160412FS	3/8	9,53	.65	16,61	3/16	4,76	3/64	1,2	.150	3,81	
VNGG3305LF	VNGG160402LF	3/8	9,53	.65	16,61	3/16	4,76	.008	0,2	.150	3,81	VNGG-LF
VNGG331LF	VNGG160404LF	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	
VNGG332LF	VNGG160408LF	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNGG432LF	VNGG220408LF	1/2	12,70	.87	22,14	3/16	4,76	1/32	0,8	.203	5,16	
VNGP330	VNGP160401	3/8	9,53	.65	16,61	3/16	4,76	.004	0,1	.150	3,81	VNGP
VNGP3305	VNGP160402	3/8	9,53	.65	16,61	3/16	4,76	.008	0,2	.150	3,81	
VNGP431	VNGP220404	1/2	12,70	.87	22,14	3/16	4,76	1/64	0,4	.203	5,16	
VNGP432	VNGP220408	1/2	12,70	.87	22,14	3/16	4,76	1/32	0,8	.203	5,16	
VNMA332	VNMA160408	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNMA

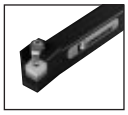
Order example:
ANSI catalog number: VNMA332S0420
Insert grade: KD120

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K										N				S								H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
VNMA-E 	VNMA332E																			●																		●		
VNMG-FF	VNMG331FF VNMG332FF	● ●	● ●				● ●	● ●	● ●			● ●																	● ●											
VNMG-FN	VNMG331FN VNMG332FN	● ●	● ●	● ●			● ●					● ●	● ●																											
VNMG-FP	VNMG331FP VNMG332FP	● ●			● ●		● ●	● ●	● ●			● ●																	● ●										● ●	
VNMG-MN	VNMG331MN VNMG332MN VNMG333MN		● ● ●	● ● ●	● ● ●	 ● ●																																	● ● ●
VNMG-MP	VNMG331MP VNMG332MP VNMG333MP				● ● ●			● ● ●	● ● ●	● ● ●	● ● ●																	● ● ●	● ● ●	● ● ●										● ● ●	● ● ●
VNMG-MS	VNMG330MS VNMG3305MS VNMG331MS																				● ● ●				● ● ●		● ● ●	● ● ●											
	VNMG332MS VNMG431MS VNMG432MS																				● ● ●				● ● ●		● ● ●	● ● ●											
VNMG-P 	VNMG331P VNMG332P							● ●	● ●	● ●																			● ●	● ●										

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

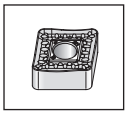
A239-A241

A248-A251

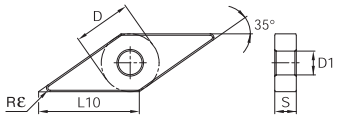
A6-A19

A26-A27

A28-A32


A33-A37

VN..



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
VNMA332E	VNMA160408E	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNMA-E
VNMG331FF VNMG332FF	VNMG160404FF VNMG160408FF	3/8 3/8	9,53 9,53	.65 .65	16,61 16,61	3/16 3/16	4,76 4,76	1/64 1/32	0,4 0,8	.150 .150	3,81 3,81	VNMG-FF
VNMG331FN VNMG332FN	VNMG160404FN VNMG160408FN	3/8 3/8	9,53 9,53	.65 .65	16,61 16,61	3/16 3/16	4,76 4,76	1/64 1/32	0,4 0,8	.150 .150	3,81 3,81	VNMG-FN
VNMG331FP VNMG332FP	VNMG160404FP VNMG160408FP	3/8 3/8	9,53 9,53	.65 .65	16,61 16,61	3/16 3/16	4,76 4,76	1/64 1/32	0,4 0,8	.150 .150	3,81 3,81	VNMG-FP
VNMG331MN VNMG332MN VNMG333MN	VNMG160404MN VNMG160408MN VNMG160412MN	3/8 3/8 3/8	9,53 9,53 9,53	.65 .65 .65	16,61 16,61 16,61	3/16 3/16 3/16	4,76 4,76 4,76	1/64 1/32 3/64	0,4 0,8 1,2	.150 .150 .150	3,81 3,81 3,81	VNMG-MN
VNMG331MP VNMG332MP VNMG333MP	VNMG160404MP VNMG160408MP VNMG160412MP	3/8 3/8 3/8	9,53 9,53 9,53	.65 .65 .65	16,61 16,61 16,61	3/16 3/16 3/16	4,76 4,76 4,76	1/64 1/32 3/64	0,4 0,8 1,2	.150 .150 .150	3,81 3,81 3,81	VNMG-MP
VNMG330MS VNMG3305MS VNMG331MS VNMG332MS VNMG431MS VNMG432MS	VNMG160401MS VNMG160402MS VNMG160404MS VNMG160408MS VNMG220404MS VNMG220408MS	3/8 3/8 3/8 3/8 1/2 1/2	9,53 9,53 9,53 9,53 12,70 12,70	.65 .65 .65 .65 .87 .87	16,61 16,61 16,61 16,61 22,14 22,14	3/16 3/16 3/16 3/16 3/16 3/16	4,76 4,76 4,76 4,76 4,76 4,76	.004 .008 1/64 1/32 1/64 1/32	0,1 0,2 0,4 0,8 0,4 0,8	.150 .150 .150 .150 .203 .203	3,81 3,81 3,81 3,81 5,16 5,16	VNMG-MS
VNMG331P VNMG332P	VNMG160404P VNMG160408P	3/8 3/8	9,53 9,53	.65 .65	16,61 16,61	3/16 3/16	4,76 4,76	1/64 1/32	0,4 0,8	.150 .150	3,81 3,81	VNMG-P

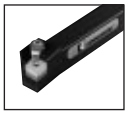
Order example:
ANSI catalog number: VNMA332E
Insert grade: KB9640

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S										H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
VNMG-RN	VNMG332RN		●	●	●	●																																		●
	VNMG333RN		●	●	●	●																																		
	VNMG432RN		●	●	●	●																																		●
	VNMG433RN		●	●	●	●																																		
VNMG-RP	VNMG332RP		●	●	●			●	●	●	●		●	●												●	●	●	●	●										●
	VNMG333RP		●	●	●			●	●	●	●		●	●												●	●	●	●	●										●
VNMG-UN	VNMG331UN												●	●																										
	VNMG332UN												●	●																										
VNMP-K	VNMP331K		●	●																																			
	VNMP332K		●	●																																			
VNMS	VNMS331																					●			●														
	VNMS332																					●			●														
WNGA-FW/ MW MT	WNGA431S0420FWMT																																			●				
	WNGA432S0420FWMT																																			●				
	WNGA433S0420FWMT																																			●				
WNGA-MT	WNGA431S0420MT																																			●				
	WNGA432S0420MT																																			●				
	WNGA433S0420MT																																			●				
WNGA-FW	WNGA431FW														●																				●					
	WNGA432FW														●																				●					
	WNGA432T0420FW															●	●	●																						
	WNGA433FW														●																				●					
	WNGA433T0420FW															●	●	●																						
	WNGA433T0820FW															●																								
	WNGA434T0420FW																	●	●																					

* Grade KC9140 available Spring 2005


A152-A171

A204-A209

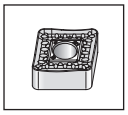
A239-A241

A248-A251

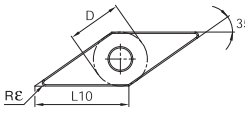
A6-A19

A26-A27

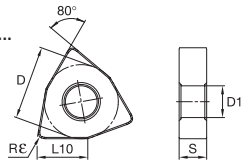
A28-A32


A33-A37

VN...



WN...



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
VNMG332RN	VNMG160408RN	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNMG-RN
VNMG333RN	VNMG160412RN	3/8	9,53	.65	16,61	3/16	4,76	3/64	1,2	.150	3,81	
VNMG432RN	VNMG220408RN	1/2	12,70	.87	22,14	3/16	4,76	1/32	0,8	.203	5,16	
VNMG433RN	VNMG220412RN	1/2	12,70	.87	22,14	3/16	4,76	3/64	1,2	.203	5,16	
VNMG332RP	VNMG160408RP	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	VNMG-RP
VNMG333RP	VNMG160412RP	3/8	9,53	.65	16,61	3/16	4,76	3/64	1,2	.150	3,81	
VNMG331UN	VNMG160404UN	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNMG-UN
VNMG332UN	VNMG160408UN	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNMP331K	VNMP160404K	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNMP-K
VNMP332K	VNMP160408K	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
VNMS331	VNMS160404	3/8	9,53	.65	16,61	3/16	4,76	1/64	0,4	.150	3,81	VNMS
VNMS332	VNMS160408	3/8	9,53	.65	16,61	3/16	4,76	1/32	0,8	.150	3,81	
WNGA431S0420FWMT	WNGA080404S01020FWMT	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	WNGA-FW/ MW MT
WNGA432S0420FWMT	WNGA080408S01020FWMT	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA433S0420FWMT	WNGA080412S01020FWMT	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA431S0420MT	WNGA080404S01020MT	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	WNGA-MT
WNGA432S0420MT	WNGA080408S01020MT	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA433S0420MT	WNGA080412S01020MT	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA431FW	WNGA080404EFW	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	WNGA-FW
WNGA432FW	WNGA080408EFW	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA432T0420FW	WNGA080408T01020FW	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA433FW	WNGA080412EFW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA433T0420FW	WNGA080412T01020FW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA433T0820FW	WNGA080412T02020FW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA434T0420FW	WNGA080416T01020FW	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	

Order example:
ANSI catalog number: VNMG332RN
Insert grade: KC9110

KENLOC Inserts

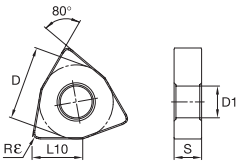
Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K								N				S										H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
WNGA	WNGA431T0420														●																				●						
	WNGA432T0420														●																				●						
	WNGA432T0820																●	●																							
	WNGA433T0420														●																				●						
	WNGA433T0820															●	●	●																							
	WNGA434T0820															●	●	●																							
WNGG-FS	WNGG430FS																				●				●		●	●												
	WNGG4305FS																				●				●		●	●												
	WNGG431FS																				●				●		●	●												
	WNGG432FS																				●				●		●	●												
	WNGG433FS																				●				●		●	●												
WNGG-LF	WNGG430LF							●																																
	WNGG4305LF							●																																
	WNGG431LF							●																																
	WNGG432LF							●																																
WNMA	WNMA332												●	●																										
	WNMA333												●	●																										
	WNMA432												●	●																										
	WNMA432S0820																			●																			●	
	WNMA433												●	●																										
	WNMA433E																			●																			●	
	WNMA433S0820																			●																			●	
	WNMA433T0820																	●																						
	WNMA434												●	●																										
	WNMA434S0820																			●																			●	
WNMA-MW	WNMA432S0820MW																			●																			●	
	WNMA433S0820MW																			●																			●	
WNMG-FF	WNMG331FF	●	●				●	●	●			●																	●											
	WNMG332FF	●	●				●	●	●			●																	●											
	WNMG431FF	●	●				●	●	●			●																	●											
	WNMG432FF	●	●				●	●	●			●																	●											
WNMG-FN	WNMG331FN	●	●	●			●					●	●																											
	WNMG332FN	●	●	●			●					●	●																											
	WNMG431FN	●	●	●			●					●	●																											
	WNMG432FN	●	●	●			●					●	●																											
	WNMG433FN	●	●	●			●					●	●																											
	WNMG434FN	●	●	●			●					●	●																											

* Grade KC9140 available Spring 2005

A152-A171 | A204-A209 | A239-A241 | A248-A251 | A6-A19 | A26-A27 | A28-A32 | A33-A37

WN..



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
WNGA431T0420	WNGA080404T01020	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	WNGA
WNGA432T0420	WNGA080408T01020	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA432T0820	WNGA080408T02020	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGA433T0420	WNGA080412T01020	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA433T0820	WNGA080412T02020	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGA434T0820	WNGA080416T02020	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	
WNGG430FS	WNGG080401FS	1/2	12,70	.34	8,69	3/16	4,76	.004	0,1	.203	5,16	WNGG-FS
WNGG4305FS	WNGG080402FS	1/2	12,70	.34	8,69	3/16	4,76	.008	0,2	.203	5,16	
WNGG431FS	WNGG080404FS	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNGG432FS	WNGG080408FS	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNGG433FS	WNGG080412FS	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNGG430LF	WNGG080401LF	1/2	12,70	.34	8,69	3/16	4,76	.004	0,1	.203	5,16	WNGG-LF
WNGG4305LF	WNGG080402LF	1/2	12,70	.34	8,69	3/16	4,76	.008	0,2	.203	5,16	
WNGG431LF	WNGG080404LF	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNGG432LF	WNGG080408LF	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMA332	WNMA060408	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	WNMA
WNMA333	WNMA060412	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMA432	WNMA080408	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMA432S0820	WNMA080408S02020	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMA433	WNMA080412	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMA433E	WNMA080412E	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMA433S0820	WNMA080412S02020	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMA433T0820	WNMA080412T02020	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMA434	WNMA080416	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	
WNMA434S0820	WNMA080416S02020	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	
WNMA432S0820MW	WNMA080408S02020MW	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	WNMA-MW
WNMA433S0820MW	WNMA080412S02020MW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG331FF	WNMG060404FF	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-FF
WNMG332FF	WNMG060408FF	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG431FF	WNMG080404FF	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432FF	WNMG080408FF	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG331FN	WNMG060404FN	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-FN
WNMG332FN	WNMG060408FN	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG431FN	WNMG080404FN	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432FN	WNMG080408FN	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433FN	WNMG080412FN	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG434FN	WNMG080416FN	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	

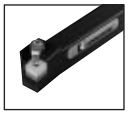
Order example:
ANSI catalog number: WNGA431T0420
Insert grade: KY4400

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K										N				S								H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
WNMG-FP	WNMG331FP	●			●		●	●	●			●																	●										●	
	WNMG332FP	●			●		●	●	●			●																	●										●	
	WNMG431FP	●			●		●	●	●			●																	●										●	
	WNMG432FP	●			●		●	●	●			●																	●										●	
	WNMG433FP	●			●		●	●	●			●																	●											
WNMG-FW	WNMG331FW	●	●				●	●	●			●	●																	●											
	WNMG332FW	●	●				●	●	●			●	●																	●											
	WNMG333FW	●	●				●	●	●			●	●																	●											
	WNMG431FW	●	●				●	●	●			●	●																	●											
	WNMG432FW	●	●				●	●	●			●	●																	●											
	WNMG433FW	●	●				●	●	●			●	●																	●											
WNMG-MN	WNMG331MN		●	●	●	●																																●	●
	WNMG332MN		●	●	●	●																																●	●
	WNMG333MN		●	●	●	●																																●	●
	WNMG432MN		●	●	●	●																																●	●
	WNMG433MN		●	●	●	●																																●	●
	WNMG434MN		●	●	●	●																																	
WNMG-MP	WNMG331MP				●			●	●	●	●																		●	●	●								●	●
	WNMG332MP				●			●	●	●	●																		●	●	●								●	●
	WNMG333MP				●			●	●	●	●																		●	●	●								●	●
	WNMG432MP				●			●	●	●	●																		●	●	●								●	●
	WNMG433MP				●			●	●	●	●																		●	●	●								●	●
WNMG-MS	WNMG332MS																				●				●		●	●												
	WNMG333MS																				●				●		●	●												
	WNMG430MS																				●				●		●	●												
	WNMG4305MS																				●				●		●	●												
	WNMG431MS																				●				●		●	●												
	WNMG432MS																				●				●		●	●												
WNMG-MW	WNMG332MW		●	●	●				●	●			●	●															●	●										
	WNMG333MW		●	●	●				●	●			●	●															●	●										
	WNMG432MW		●	●	●				●	●			●	●															●	●										
	WNMG433MW		●	●	●				●	●			●	●															●	●										
WNMG-P	WNMG431P							●	●																				●											
	WNMG432P							●	●	●																			●	●											
	WNMG433P									●																				●											
WNMG-RN	WNMG332RN		●	●	●	●																																●	●
	WNMG333RN		●	●	●	●																																●	●
	WNMG432RN		●	●	●	●																																●	●
	WNMG433RN		●	●	●	●																																●	●
	WNMG434RN		●	●	●	●																																	

* Grade KC9140 available Spring 2005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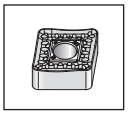
A248-A251

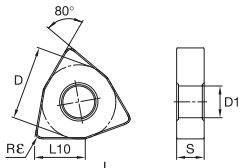
A6-A19

A26-A27

A28-A32


A33-A37

WN..

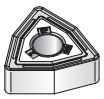
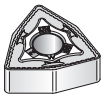


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
WNMG331FP	WNMG060404FP	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-FP
WNMG332FP	WNMG060408FP	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG431FP	WNMG080404FP	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432FP	WNMG080408FP	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433FP	WNMG080412FP	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG331FW	WNMG060404FW	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-FW
WNMG332FW	WNMG060408FW	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG333FW	WNMG060412FW	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG431FW	WNMG080404FW	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432FW	WNMG080408FW	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433FW	WNMG080412FW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG331MN	WNMG060404MN	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-MN
WNMG332MN	WNMG060408MN	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG333MN	WNMG060412MN	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG432MN	WNMG080408MN	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433MN	WNMG080412MN	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG434MN	WNMG080416MN	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	
WNMG331MP	WNMG060404MP	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	WNMG-MP
WNMG332MP	WNMG060408MP	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG333MP	WNMG060412MP	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG432MP	WNMG080408MP	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433MP	WNMG080412MP	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG332MS	WNMG060408MS	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	WNMG-MS
WNMG333MS	WNMG060412MS	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG430MS	WNMG080401MS	1/2	12,70	.34	8,69	3/16	4,76	.004	0,1	.203	5,16	
WNMG4305MS	WNMG080402MS	1/2	12,70	.34	8,69	3/16	4,76	.008	0,2	.203	5,16	
WNMG431MS	WNMG080404MS	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432MS	WNMG080408MS	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG332MW	WNMG060408MW	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	WNMG-MW
WNMG333MW	WNMG060412MW	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG432MW	WNMG080408MW	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433MW	WNMG080412MW	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG431P	WNMG080404P	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	WNMG-P
WNMG432P	WNMG080408P	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433P	WNMG080412P	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG332RN	WNMG060408RN	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	WNMG-RN
WNMG333RN	WNMG060412RN	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG432RN	WNMG080408RN	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433RN	WNMG080412RN	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG434RN	WNMG080416RN	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	

Order example:
ANSI catalog number: WNMG331FP
Insert grade: KT315

KENLOC Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K									N				S									H					KENNA UNIVERSAL	
		KT315	KC9110	KC9125	KC8050	KC9040/KC9140*	KT315	KC5010	KC9225	KC9240	KC9245	KT315	KC9315	KC9325	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5410	KD1405	KD100	K313	K68	KC5510	KC5525	KC9225	KC9240	KC9245	KY2100	KY1540	KD120	KY4400	KY1615	KB9610	KB5625	KB9640	KU10T	KU30T
WNMG-RP 	WNMG332RP		●	●	●			●	●	●			●	●													●	●	●	●											●
	WNMG333RP		●	●	●			●	●	●			●	●													●	●	●	●											●
	WNMG432RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	WNMG433RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
	WNMG434RP		●	●	●			●	●	●	●		●	●													●	●	●	●	●										●
WNMG-UN 	WNMG331UN												●	●																										
	WNMG332UN												●	●																										
	WNMG333UN												●	●																										
	WNMG431UN												●	●																										
	WNMG432UN												●	●																										
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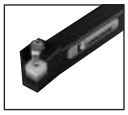
	WNMG434UN												●	●																										

* Grade KC9140 available Spring 2005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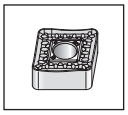
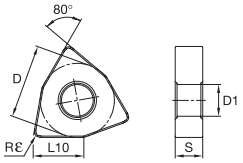
A28-A32


A33-A37

WN..



ANSI catalog number	ISO catalog number	Dimensions										
		D		L10		S		Rε		D1		
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
WNMG332RP	**WNMG060408RP**	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	**WNMG-RP**
WNMG333RP	**WNMG060412RP**	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG432RP	**WNMG080408RP**	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433RP	**WNMG080412RP**	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG434RP	**WNMG080416RP**	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	
WNMG331UN	**WNMG060404UN**	3/8	9,53	.26	6,52	3/16	4,76	1/64	0,4	.150	3,81	**WNMG-UN**
WNMG332UN	**WNMG060408UN**	3/8	9,53	.26	6,52	3/16	4,76	1/32	0,8	.150	3,81	
WNMG333UN	**WNMG060412UN**	3/8	9,53	.26	6,52	3/16	4,76	3/64	1,2	.150	3,81	
WNMG431UN	**WNMG080404UN**	1/2	12,70	.34	8,69	3/16	4,76	1/64	0,4	.203	5,16	
WNMG432UN	**WNMG080408UN**	1/2	12,70	.34	8,69	3/16	4,76	1/32	0,8	.203	5,16	
WNMG433UN	**WNMG080412UN**	1/2	12,70	.34	8,69	3/16	4,76	3/64	1,2	.203	5,16	
WNMG434UN	**WNMG080416UN**	1/2	12,70	.34	8,69	3/16	4,76	1/16	1,6	.203	5,16	

Order example:
ANSI catalog number: WNMG332RP
Insert grade: KC9110

KENDEX negative Inserts

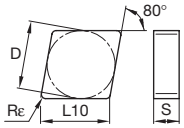
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K									N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
CNG	CNG431T0420							●																	●			
	CNG431T0820																									●		
	CNG432T0420							●													●	●	●		●			
	CNG432T0820								●	●	●															●		
	CNG433E																					●						
	CNG433T0420							●													●	●	●		●			
	CNG433T0820								●	●	●															●		
	CNG434E																					●						
	CNG434T0420							●													●	●	●		●			
	CNG434T0820								●	●	●															●		
	CNG452E																					●						
	CNG452T0420							●														●			●			
	CNG452T0820									●	●															●		
	CNG453E																					●						
	CNG453T0220																									●		
	CNG453T0420							●														●	●		●			
	CNG453T0820								●	●	●															●		
	CNG454E																					●						
	CNG454T0420							●														●	●		●			
	CNG454T0820								●	●	●															●		
	CNG532T0820																									●		
	CNG533T0820										●															●		
	CNG534T0820										●															●		
	CNG543T0820																									●		
	CNG544T0420																					●						
	CNG544T0820																									●		
	CNG552T0420							●																	●			
	CNG552T0820																									●		
	CNG553T0420							●																	●			
	CNG553T0820										●															●		
	CNG554T0420							●																	●			
	CNG554T0820										●															●		
	CNG554T2015																									●		
	CNG642T0820																									●		
	CNG643T0820																									●		
	CNG644T0820																									●		
	CNG654T0420							●																	●			
	CNG658T0820																									●		
CNGX	CNGX452E																					●						
	CNGX452T0420																					●						
	CNGX452T0820								●	●	●															●		
	CNGX453E																					●						
	CNGX453T0420																					●						
	CNGX453T0820								●	●	●															●		
	CNGX454E																					●						
	CNGX454T0420																					●						
	CNGX454T0820								●	●	●															●		
	CNGX552T0820									●	●															●		
	CNGX553T0820									●	●															●		
	CNGX554T0820								●	●	●															●		
	CNGX556T0820									●	●																	
CNGX-FW	CNGX452T0420FW									●	●																	
	CNGX453T0420FW								●	●	●																	
	CNGX453T0820FW								●																			
	CNGX454T0420FW									●	●																	

*Grade KY1525 available Spring 2005.

A172-A180 | A210-A213 | A242 | A6-A19 | A26-A27 | A28-A32 | A33-A37

CN..



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
CNG431T0420	CNGN120404T01020	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	CNG
CNG431T0820	CNGN120404T02020	1/2	12,70	.51	12,90	3/16	4,76	1/64	0,4	
CNG432T0420	CNGN120408T01020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	
CNG432T0820	CNGN120408T02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	
CNG433E	CNGN120412E	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNG433T0420	CNGN120412T01020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNG433T0820	CNGN120412T02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNG434E	CNGN120416E	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNG434T0420	CNGN120416T01020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNG434T0820	CNGN120416T02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNG452E	CNGN120708E	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNG452T0420	CNGN120708T01020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNG452T0820	CNGN120708T02020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNG453E	CNGN120712E	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNG453T0220	CNGN120712T00520	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNG453T0420	CNGN120712T01020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNG453T0820	CNGN120712T02020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNG454E	CNGN120716E	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNG454T0420	CNGN120716T01020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNG454T0820	CNGN120716T02020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNG532T0820	CNGN160408T02020	5/8	15,88	.63	16,12	3/16	4,76	1/32	0,8	
CNG533T0820	CNGN160412T02020	5/8	15,88	.63	16,12	3/16	4,76	3/64	1,2	
CNG534T0820	CNGN160416T02020	5/8	15,88	.63	16,12	3/16	4,76	1/16	1,6	
CNG543T0820	CNGN160612T02020	5/8	15,88	.63	16,12	1/4	6,35	3/64	1,2	
CNG544T0420	CNGN160616T01020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	
CNG544T0820	CNGN160616T02020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	
CNG552T0420	CNGN160708T01020	5/8	15,88	.63	16,12	5/16	7,94	1/32	0,8	
CNG552T0820	CNGN160708T02020	5/8	15,88	.63	16,12	5/16	7,94	1/32	0,8	
CNG553T0420	CNGN160712T01020	5/8	15,88	.63	16,12	5/16	7,94	3/64	1,2	
CNG553T0820	CNGN160712T02020	5/8	15,88	.63	16,12	5/16	7,94	3/64	1,2	
CNG554T0420	CNGN160716T01020	5/8	15,88	.63	16,12	5/16	7,94	1/16	1,6	
CNG554T0820	CNGN160716T02020	5/8	15,88	.63	16,12	5/16	7,94	1/16	1,6	
CNG554T2015	CNGN160716T05015	5/8	15,88	.63	16,12	5/16	7,94	1/16	1,6	
CNG642T0820	CNGN190608T02020	3/4	19,05	.76	19,34	1/4	6,35	1/32	0,8	
CNG643T0820	CNGN190612T02020	3/4	19,05	.76	19,34	1/4	6,35	3/64	1,2	
CNG644T0820	CNGN190616T02020	3/4	19,05	.76	19,34	1/4	6,35	1/16	1,6	
CNG654T0420	CNGN190716T01020	3/4	19,05	.76	19,34	5/16	7,94	1/16	1,6	
CNG658T0820	CNGN190732T02020	3/4	19,05	.76	19,34	5/16	7,94	1/8	3,2	
CNGX452E	CNGX120708E	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	CNGX
CNGX452T0420	CNGX120708T01020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNGX452T0820	CNGX120708T02020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNGX453E	CNGX120712E	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNGX453T0420	CNGX120712T01020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNGX453T0820	CNGX120712T02020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNGX454E	CNGX120716E	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNGX454T0420	CNGX120716T01020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNGX454T0820	CNGX120716T02020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNGX552T0820	CNGX160708T02020	5/8	15,88	.63	16,12	5/16	7,94	1/32	0,8	
CNGX553T0820	CNGX160712T02020	5/8	15,88	.63	16,12	5/16	7,94	3/64	1,2	
CNGX554T0820	CNGX160716T02020	5/8	15,88	.63	16,12	5/16	7,94	1/16	1,6	
CNGX556T0820	CNGX160724T02020	5/8	15,88	.63	16,12	5/16	7,94	3/32	2,4	
CNGX452T0420FW	CNGX120708T01020FW	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	CNGX-FW
CNGX453T0420FW	CNGX120712T01020FW	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNGX453T0820FW	CNGX120712T02020FW	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNGX454T0420FW	CNGX120716T01020FW	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	

Order example:
ANSI catalog number: CNG431T0420
Insert grade: KY4400

KENDEX negative Inserts

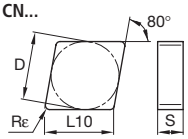
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S								H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
CNM	CNM322E												●															●
	CNM322S0820												●															●
	CNM323E												●															●
	CNM323S0820												●															●
	CNM423E												●															●
	CNM423S0820												●															●
	CNM424S0820												●															●
	CNM432S0820												●															●
	CNM432T0820										●																	
	CNM433S0820												●															●
	CNM433S1220												●															●
	CNM433T0820										●																	
	CNM434S0820												●															●
	CNM434S1220												●															●
	CNM434T0820										●																	
	CNM452T0820										●																	
	CNM453T0820										●																	
	CNM454T0820										●																	
	CNM544T0820										●																	
CNMX	CNMX452T0820										●																	
	CNMX453T0820										●																	
	CNMX454T0820										●																	
DNG	DNG431T0420							●																	●			
	DNG432T0420							●																	●			
	DNG432T0820																									●		
	DNG433T0420							●																	●			
	DNG433T0820																									●		
	DNG442T0820																									●		
	DNG443T0820																									●		
	DNG451T0420							●																	●			
	DNG451T0820																									●		
	DNG452T0420							●																	●			
	DNG452T0820																									●		
	DNG453T0420							●																	●			
	DNG453T0820																									●		
	DNG454T0420							●																	●			
	DNG454T0820																									●		
	DNG544T0820																									●		
DNGX	DNGX120708T02020									●	●															●		
	DNGX120712T02020								●	●	●															●		
	DNGX120716T02020								●	●	●															●		
	DNGX452T0420																					●						
	DNGX452T0820								●	●	●															●		
	DNGX453T0420																					●						
	DNGX453T0820								●	●	●															●		
	DNGX454T0420																					●						
	DNGX454T0820								●	●	●															●		
DNM	DNM322E												●															●
	DNM322S0820												●															●
	DNM323E												●															●
	DNM323S0820												●															●
	DNM324S0820												●															●

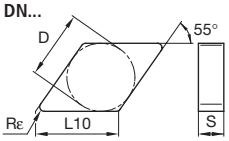
*Grade KY1525 available Spring 2005.

A172-A180 | A210-A213 | A242 | A6-A19 | A26-A27 | A28-A32 | A33-A37

CN...



DN...



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
CNM322E	CNMN090308E	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	CNM
CNM322S0820	CNMN090308S02020	3/8	9,53	.38	9,67	1/8	3,18	1/32	0,8	
CNM323E	CNMN090312E	3/8	9,53	.38	9,67	1/8	3,18	3/64	1,2	
CNM323S0820	CNMN090312S02020	3/8	9,53	.38	9,67	1/8	3,18	3/64	1,2	
CNM423E	CNMN120312E	1/2	12,70	.51	12,90	1/8	3,18	3/64	1,2	
CNM423S0820	CNMN120312S02020	1/2	12,70	.51	12,90	1/8	3,18	3/64	1,2	
CNM424S0820	CNMN120316S02020	1/2	12,70	.51	12,90	1/8	3,18	1/16	1,6	
CNM432S0820	CNMN120408S02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	
CNM432T0820	CNMN120408T02020	1/2	12,70	.51	12,90	3/16	4,76	1/32	0,8	
CNM433S0820	CNMN120412S02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNM433S1220	CNMN120412S03020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNM433T0820	CNMN120412T02020	1/2	12,70	.51	12,90	3/16	4,76	3/64	1,2	
CNM434S0820	CNMN120416S02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNM434S1220	CNMN120416S03020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNM434T0820	CNMN120416T02020	1/2	12,70	.51	12,90	3/16	4,76	1/16	1,6	
CNM452T0820	CNMN120708T02020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	
CNM453T0820	CNMN120712T02020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNM454T0820	CNMN120716T02020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
CNM544T0820	CNMN160616T02020	5/8	15,88	.63	16,12	1/4	6,35	1/16	1,6	
CNMX452T0820	CNMX120708T02020	1/2	12,70	.51	12,90	5/16	7,94	1/32	0,8	CNMX
CNMX453T0820	CNMX120712T02020	1/2	12,70	.51	12,90	5/16	7,94	3/64	1,2	
CNMX454T0820	CNMX120716T02020	1/2	12,70	.51	12,90	5/16	7,94	1/16	1,6	
DNG431T0420	DNGN150404T01020	1/2	12,70	.61	15,50	3/16	4,76	1/64	0,4	DNG
DNG432T0420	DNGN150408T01020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	
DNG432T0820	DNGN150408T02020	1/2	12,70	.61	15,50	3/16	4,76	1/32	0,8	
DNG433T0420	DNGN150412T01020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	
DNG433T0820	DNGN150412T02020	1/2	12,70	.61	15,50	3/16	4,76	3/64	1,2	
DNG442T0820	DNGN150608T02020	1/2	12,70	.61	15,50	1/4	6,35	1/32	0,8	
DNG443T0820	DNGN150612T02020	1/2	12,70	.61	15,50	1/4	6,35	3/64	1,2	
DNG451T0420	DNGN150704T01020	1/2	12,70	.61	15,50	5/16	7,94	1/64	0,4	
DNG451T0820	DNGN150704T02020	1/2	12,70	.61	15,50	5/16	7,94	1/64	0,4	
DNG452T0420	DNGN150708T01020	1/2	12,70	.61	15,50	5/16	7,94	1/32	0,8	
DNG452T0820	DNGN150708T02020	1/2	12,70	.61	15,50	5/16	7,94	1/32	0,8	
DNG453T0420	DNGN150712T01020	1/2	12,70	.61	15,50	5/16	7,94	3/64	1,2	
DNG453T0820	DNGN150712T02020	1/2	12,70	.61	15,50	5/16	7,94	3/64	1,2	
DNG454T0420	DNGN150716T01020	1/2	12,70	.61	15,50	5/16	7,94	1/16	1,6	
DNG454T0820	DNGN150716T02020	1/2	12,70	.61	15,50	5/16	7,94	1/16	1,6	
DNG544T0820	DNGN190616T02020	5/8	15,88	.76	19,34	1/4	6,35	1/16	1,6	
DNGX120708T02020	DNGX120708T02020	.3937	10,00	.48	12,21	5/16	7,94	1/32	0,8	DNGX
DNGX120712T02020	DNGX120712T02020	.3937	10,00	.48	12,21	5/16	7,94	3/64	1,2	
DNGX120716T02020	DNGX120716T02020	.3937	10,00	.48	12,21	5/16	7,94	1/16	1,6	
DNGX452T0420	DNGX150708T01020	1/2	12,70	.61	15,50	5/16	7,94	1/32	0,8	
DNGX452T0820	DNGX150708T02020	1/2	12,70	.61	15,50	5/16	7,94	1/32	0,8	
DNGX453T0420	DNGX150712T01020	1/2	12,70	.61	15,50	5/16	7,94	3/64	1,2	
DNGX453T0820	DNGX150712T02020	1/2	12,70	.61	15,50	5/16	7,94	3/64	1,2	
DNGX454T0420	DNGX150716T01020	1/2	12,70	.61	15,50	5/16	7,94	1/16	1,6	
DNGX454T0820	DNGX150716T02020	1/2	12,70	.61	15,50	5/16	7,94	1/16	1,6	
DNM322E	DNMN110308E	3/8	9,53	.46	11,63	1/8	3,18	1/32	0,8	DNM
DNM322S0820	DNMN110308S02020	3/8	9,53	.46	11,63	1/8	3,18	1/32	0,8	
DNM323E	DNMN110312E	3/8	9,53	.46	11,63	1/8	3,18	3/64	1,2	
DNM323S0820	DNMN110312S02020	3/8	9,53	.46	11,63	1/8	3,18	3/64	1,2	
DNM324S0820	DNMN110316S02020	3/8	9,53	.46	11,63	1/8	3,18	1/16	1,6	

Order example:
ANSI catalog number: CNM322E
Insert grade: KB9640

KENDEX negative Inserts

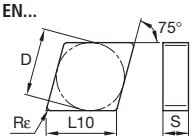
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
DNMX	DNMX453T0820										●																	
	DNMX454T0820										●																	
ENG	ENG432T0820										●																	
	ENG433T0820										●																	
	ENG434T0820										●																	
	ENG451T0820																									●		
	ENG452T0820						●				●															●		
	ENG453T0820						●				●															●		
	ENG454T0820										●															●		
ENGX	ENGX452T0820									●	●															●		
	ENGX453T0820									●	●															●		
	ENGX454T0820									●	●															●		
ENM	ENM453T0820										●																	
	ENM454T0820										●																	
ENMX	ENMX453T0820										●																	
	ENMX454T0820										●																	
RNG	RNG32																		●									
	RNG32T0820																									●		
	RNG33T0820																									●		
	RNG42																		●									
	RNG42T0420							●																	●			
	RNG42T0820							●																		●		
	RNG43																		●									
	RNG43E							●													●	●			●			
	RNG43T0420							●													●	●	●		●			
	RNG43T0820								●	●	●															●		
	RNG45													●				●										
	RNG45E							●													●	●	●		●	●		
	RNG45T0420							●													●	●	●		●			
	RNG45T0820								●	●	●															●		
	RNG45T4015																									●		
	RNG45T8015																									●		
	RNG55T0820										●															●		

*Grade KY1525 available Spring 2005.

A172-A180 | A210-A213 | A242 | A6-A19 | A26-A27 | A28-A32 | A33-A37

EN...



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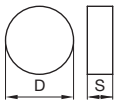
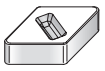
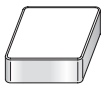
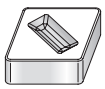
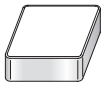
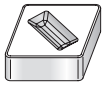


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
DNMX453T0820	DNMX150712T02020	1/2	12,70	.61	15,50	5/16	7,94	3/64	1,2	DNMX 
DNMX454T0820	DNMX150716T02020	1/2	12,70	.61	15,50	5/16	7,94	1/16	1,6	
ENG432T0820	ENGN130408T02020	1/2	12,70	.52	13,15	3/16	4,76	1/32	0,8	ENG 
ENG433T0820	ENGN130412T02020	1/2	12,70	.52	13,15	3/16	4,76	3/64	1,2	
ENG434T0820	ENGN130416T02020	1/2	12,70	.52	13,15	3/16	4,76	1/16	1,6	
ENG451T0820	ENGN130704T02020	1/2	12,70	.52	13,15	5/16	7,94	1/64	0,4	
ENG452T0820	ENGN130708T02020	1/2	12,70	.52	13,15	5/16	7,94	1/32	0,8	
ENG453T0820	ENGN130712T02020	1/2	12,70	.52	13,15	5/16	7,94	3/64	1,2	
ENG454T0820	ENGN130716T02020	1/2	12,70	.52	13,15	5/16	7,94	1/16	1,6	
ENGX452T0820	ENGX130708T02020	1/2	12,70	.52	13,15	5/16	7,94	1/32	0,8	ENGX 
ENGX453T0820	ENGX130712T02020	1/2	12,70	.52	13,15	5/16	7,94	3/64	1,2	
ENGX454T0820	ENGX130716T02020	1/2	12,70	.52	13,15	5/16	7,94	1/16	1,6	
ENM453T0820	ENMN130712T02020	1/2	12,70	.52	13,15	5/16	7,94	3/64	1,2	ENM 
ENM454T0820	ENMN130716T02020	1/2	12,70	.52	13,15	5/16	7,94	1/16	1,6	
ENMX453T0820	ENMX130712T02020	1/2	12,70	.52	13,15	5/16	7,94	3/64	1,2	ENMX 
ENMX454T0820	ENMX130716T02020	1/2	12,70	.52	13,15	5/16	7,94	1/16	1,6	
RNG32	RNGN090300	3/8	9,53	-	-	1/8	3,18	-	-	RNG
RNG32T0820	RNGN090300T02020	3/8	9,53	-	-	1/8	3,18	-	-	
RNG33T0820	RNGN090400T02020	3/8	9,53	-	-	3/16	4,76	-	-	
RNG42	RNGN120300	1/2	12,70	-	-	1/8	3,18	-	-	
RNG42T0420	RNGN120300T01020	1/2	12,70	-	-	1/8	3,18	-	-	
RNG42T0820	RNGN120300T02020	1/2	12,70	-	-	1/8	3,18	-	-	
RNG43	RNGN120400	1/2	12,70	-	-	3/16	4,76	-	-	
RNG43E	RNGN120400E	1/2	12,70	-	-	3/16	4,76	-	-	
RNG43T0420	RNGN120400T01020	1/2	12,70	-	-	3/16	4,76	-	-	
RNG43T0820	RNGN120400T02020	1/2	12,70	-	-	3/16	4,76	-	-	
RNG45	RNGN120700	1/2	12,70	-	-	5/16	7,94	-	-	
RNG45E	RNGN120700E	1/2	12,70	-	-	5/16	7,94	-	-	
RNG45T0420	RNGN120700T01020	1/2	12,70	-	-	5/16	7,94	-	-	
RNG45T0820	RNGN120700T02020	1/2	12,70	-	-	5/16	7,94	-	-	
RNG45T4015	RNGN120700T10015	1/2	12,70	-	-	5/16	7,94	-	-	
RNG45T8015	RNGN120700T20015	1/2	12,70	-	-	5/16	7,94	-	-	
RNG55T0820	RNGN150700T02020	5/8	15,88	-	-	5/16	7,94	-	-	

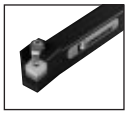
Order example:
ANSI catalog number: DNMX453T0820
Insert grade: KY3500

KENDEX negative Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
RNG	RNG65E																					●	●				
	RNG65T0420																					●	●				
	RNG65T0820										●														●		
	RNG85K8015																								●		
	RNG85P8015																								●		
	RNG85T0820										●														●		
	RNG85T8015																								●		
	RNG86T0820																								●		
RNM	RNM22S0820												●														●
	RNM32E												●														●
	RNM32S0820												●														●
	RNM42E												●														●
	RNM42S0820												●														●
	RNM43S0820												●														●
	RNM43S1220												●														●
	RNM43T0820										●																
	RNM45T0820										●																
	RNM82S0820												●														●
	RNM82S2020												●														●
	RNM83S6020												●														●
	RNM84S0820												●														●
	RNM84S6020												●														●
SNG	SNG321																		●								
	SNG322																		●								
	SNG322T0220																								●		
	SNG322T0420							●																	●		
	SNG322T0820																								●		
	SNG323T0420							●																	●		
	SNG323T0820																								●		
	SNG333T0215																								●		
	SNG333T0820																								●		
	SNG422																		●								
	SNG432																		●								
	SNG432T0220																								●		
	SNG432T0420							●														●			●		
	SNG432T0820								●	●	●														●		
	SNG433																		●		●						
	SNG433T0420							●														●	●		●		
	SNG433T0820						●		●	●	●															●	
	SNG434																				●						
	SNG434T0420							●													●	●	●		●		
	SNG434T0820								●		●															●	
	SNG436T0820										●															●	
	SNG438T0820										●															●	
	SNG451T0420							●																	●		
	SNG451T0820																									●	
	SNG452T0420							●														●			●		
	SNG452T0820						●																			●	
	SNG453K6015																									●	
	SNG453T0420							●													●	●	●		●		
	SNG453T0820						●		●	●	●															●	
	SNG454T0420							●															●	●	●		
	SNG454T0820								●	●	●															●	
	SNG454T1230						●																				
	SNG455T0820																									●	
	SNG455T4015																									●	
	SNG455T8015																									●	
	SNGN120725T05015																									●	
	SNG534T0820										●																
	SNG553T0820										●															●	
	SNG554T0820										●															●	

*Grade KY1525 available Spring 2005.


A172-A180

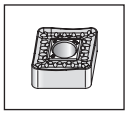
A210-A213

A242

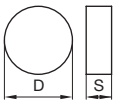
A6-A19

A26-A27

A28-A32


A33-A37

RN...



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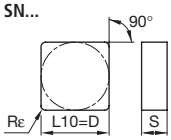


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
RNG65E	RNGN190700E	3/4	19,05	-	-	5/16	7,94	-	-	RNG
RNG65T0420	RNGN190700T01020	3/4	19,05	-	-	5/16	7,94	-	-	
RNG65T0820	RNGN190700T02020	3/4	19,05	-	-	5/16	7,94	-	-	
RNG85K8015	RNGN250700K20015	1	25,40	-	-	5/16	7,94	-	-	
RNG85P8015	RNGN250700P20015	1	25,40	-	-	5/16	7,94	-	-	
RNG85T0820	RNGN250700T02020	1	25,40	-	-	5/16	7,94	-	-	
RNG85T8015	RNGN250700T20015	1	25,40	-	-	5/16	7,94	-	-	
RNG86T0820	RNGN250900T02020	1	25,40	-	-	3/8	9,53	-	-	
RNM22S0820	RNMN060300S02020	1/4	6,35	-	-	1/8	3,18	-	-	RNM
RNM32E	RNMN090300E	3/8	9,53	-	-	1/8	3,18	-	-	
RNM32S0820	RNMN090300S02020	3/8	9,53	-	-	1/8	3,18	-	-	
RNM42E	RNMN120300E	1/2	12,70	-	-	1/8	3,18	-	-	
RNM42S0820	RNMN120300S02020	1/2	12,70	-	-	1/8	3,18	-	-	
RNM43S0820	RNMN120400S02020	1/2	12,70	-	-	3/16	4,76	-	-	
RNM43S1220	RNMN120400S03020	1/2	12,70	-	-	3/16	4,76	-	-	
RNM43T0820	RNMN120400T02020	1/2	12,70	-	-	3/16	4,76	-	-	
RNM45T0820	RNMN120700T02020	1/2	12,70	-	-	5/16	7,94	-	-	
RNM82S0820	RNMN250300S02020	1	25,40	-	-	1/8	3,18	-	-	
RNM82S2020	RNMN250300S05020	1	25,40	-	-	1/8	3,18	-	-	
RNM83S6020	RNMN250400S15020	1	25,40	-	-	3/16	4,76	-	-	
RNM84S0820	RNMN250600S02020	1	25,40	-	-	1/4	6,35	-	-	
RNM84S6020	RNMN250600S15020	1	25,40	-	-	1/4	6,35	-	-	
SNG321	SNGN090304	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	SNG
SNG322	SNGN090308	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNG322T0220	SNGN090308T00520	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNG322T0420	SNGN090308T01020	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNG322T0820	SNGN090308T02020	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNG323T0420	SNGN090312T01020	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SNG323T0820	SNGN090312T02020	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SNG333T0215	SNGN090412T00515	3/8	9,53	.38	9,53	3/16	4,76	3/64	1,2	
SNG333T0820	SNGN090412T02020	3/8	9,53	.38	9,53	3/16	4,76	3/64	1,2	
SNG422	SNGN120308	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SNG432	SNGN120408	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SNG432T0220	SNGN120408T00520	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SNG432T0420	SNGN120408T01020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SNG432T0820	SNGN120408T02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SNG433	SNGN120412E	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNG433T0420	SNGN120412T01020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNG433T0820	SNGN120412T02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNG434	SNGN120416E	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNG434T0420	SNGN120416T01020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNG434T0820	SNGN120416T02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNG436T0820	SNGN120424T02020	1/2	12,70	.50	12,70	3/16	4,76	3/32	2,4	
SNG438T0820	SNGN120432T02020	1/2	12,70	.50	12,70	3/16	4,76	1/8	3,2	
SNG451T0420	SNGN120704T01020	1/2	12,70	.50	12,70	5/16	7,94	1/64	0,4	
SNG451T0820	SNGN120704T02020	1/2	12,70	.50	12,70	5/16	7,94	1/64	0,4	
SNG452T0420	SNGN120708T01020	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	
SNG452T0820	SNGN120708T02020	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	
SNG453K6015	SNGN120712K15015	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNG453T0420	SNGN120712T01020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNG453T0820	SNGN120712T02020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNG454T0420	SNGN120716T01020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNG454T0820	SNGN120716T02020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNG454T1230	SNGN120716T03030	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNG455T0820	SNGN120720T02020	1/2	12,70	.50	12,70	5/16	7,94	5/64	2,0	
SNG455T4015	SNGN120720T10015	1/2	12,70	.50	12,70	5/16	7,94	5/64	2,0	
SNG455T8015	SNGN120720T20015	1/2	12,70	.50	12,70	5/16	7,94	5/64	2,0	
SNGN120725T05015	SNGN120725T05015	1/2	12,70	.50	12,70	5/16	7,94	.0984	2,5	
SNG534T0820	SNGN150416T02020	5/8	15,88	.63	15,88	3/16	4,76	1/16	1,6	
SNG553T0820	SNGN150712T02020	5/8	15,88	.63	15,88	5/16	7,94	3/64	1,2	
SNG554T0820	SNGN150716T02020	5/8	15,88	.63	15,88	5/16	7,94	1/16	1,6	

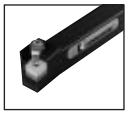
Order example:
ANSI catalog number: RNG65E
Insert grade: KY1540

KENDEX negative Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K									N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
SNG	SNG633T0820										●															●		
	SNG634T0820										●															●		
	SNG643T0820										●															●		
	SNG644																				●							
	SNG644E																					●						
	SNG644T0420																					●						
	SNG644T0820										●															●		
	SNG652T0820																									●		
	SNG653T0820																									●		
	SNG654T0820																									●		
	SNG655K8015																									●		
	SNG655P8015																									●		
	SNG655T0820																									●		
	SNG655T8015																									●		
	SNG656E																					●	●					
	SNG656T0820																									●		
SNG-FW	SNG452T0420FW										●																	
	SNG453T0420FW								●		●																	
SNGX	SNGX452E																					●						
	SNGX452T0420																					●						
	SNGX452T0820								●	●	●															●		
	SNGX453E																					●						
	SNGX453T0420																					●						
	SNGX453T0820								●	●	●															●		
	SNGX454E																					●						
	SNGX454T0420																					●						
	SNGX454T0820								●	●	●															●		
	SNGX552T0820									●	●															●		
	SNGX553T0820									●	●															●		
	SNGX554T0820								●	●	●															●		
	SNGX556T0820									●	●																	
SNGX-FW	SNGX452T0420FW										●																	
	SNGX453T0420FW								●		●																	
SNM	SNM222E												●															●
	SNM222S0820												●															●
	SNM322E												●															●
	SNM322S0820												●															●
	SNM323E												●															●
	SNM323S0820												●															●
	SNM324S0820												●															●
	SNM334S0820												●															●
	SNM422E												●															●
	SNM422S0820												●															●
	SNM423S0820												●															●
	SNM424S0820												●															●

*Grade KY1525 available Spring 2005.


A172-A180

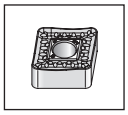
A210-A213

A242

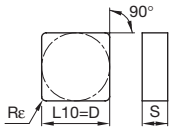
A6-A19

A26-A27

A28-A32


A33-A37

SN...



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
SNG633T0820	SNGN190412T02020	3/4	19,05	.75	19,05	3/16	4,76	3/64	1,2	SNG
SNG634T0820	SNGN190416T02020	3/4	19,05	.75	19,05	3/16	4,76	1/16	1,6	
SNG643T0820	SNGN190612T02020	3/4	19,05	.75	19,05	1/4	6,35	3/64	1,2	
SNG644	SNGN190616E	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	
SNG644E	SNGN190616E	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	
SNG644T0420	SNGN190616T01020	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	
SNG644T0820	SNGN190616T02020	3/4	19,05	.75	19,05	1/4	6,35	1/16	1,6	
SNG652T0820	SNGN190708T02020	3/4	19,05	.75	19,05	5/16	7,94	1/32	0,8	
SNG653T0820	SNGN190712T02020	3/4	19,05	.75	19,05	5/16	7,94	3/64	1,2	
SNG654T0820	SNGN190716T02020	3/4	19,05	.75	19,05	5/16	7,94	1/16	1,6	
SNG655K8015	SNGN190720K20015	3/4	19,05	.75	19,05	5/16	7,94	5/64	2,0	
SNG655P8015	SNGN190720P20015	3/4	19,05	.75	19,05	5/16	7,94	5/64	2,0	
SNG655T0820	SNGN190720T02020	3/4	19,05	.75	19,05	5/16	7,94	5/64	2,0	
SNG655T8015	SNGN190720T20015	3/4	19,05	.75	19,05	5/16	7,94	5/64	2,0	
SNG656E	SNGN190724E	3/4	19,05	.75	19,05	5/16	7,94	3/32	2,4	
SNG656T0820	SNGN190724T02020	3/4	19,05	.75	19,05	5/16	7,94	3/32	2,4	
SNG452T0420FW	SNGN120708T01020FW	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	SNG-FW
SNG453T0420FW	SNGN120712T01020FW	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNGX452E	SNGX120708E	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	SNGX
SNGX452T0420	SNGX120708T01020	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	
SNGX452T0820	SNGX120708T02020	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	
SNGX453E	SNGX120712E	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNGX453T0420	SNGX120712T01020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNGX453T0820	SNGX120712T02020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNGX454E	SNGX120716E	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNGX454T0420	SNGX120716T01020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNGX454T0820	SNGX120716T02020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNGX552T0820	SNGX150708T02020	5/8	15,88	.63	15,88	5/16	7,94	1/32	0,8	
SNGX553T0820	SNGX150712T02020	5/8	15,88	.63	15,88	5/16	7,94	3/64	1,2	
SNGX554T0820	SNGX150716T02020	5/8	15,88	.63	15,88	5/16	7,94	1/16	1,6	
SNGX556T0820	SNGX150724T02020	5/8	15,88	.63	15,88	5/16	7,94	3/32	2,4	
SNGX452T0420FW	SNGX120708T01020FW	1/2	12,70	.50	12,70	5/16	7,94	1/32	0,8	SNGX-FW
SNGX453T0420FW	SNGX120712T01020FW	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNM222E	SNMN060308E	1/4	6,35	.25	6,35	1/8	3,18	1/32	0,8	SNM
SNM222S0820	SNMN060308S02020	1/4	6,35	.25	6,35	1/8	3,18	1/32	0,8	
SNM322E	SNMN090308E	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNM322S0820	SNMN090308S02020	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SNM323E	SNMN090312E	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SNM323S0820	SNMN090312S02020	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SNM324S0820	SNMN090316S02020	3/8	9,53	.38	9,53	1/8	3,18	1/16	1,6	
SNM334S0820	SNMN090416S02020	3/8	9,53	.38	9,53	3/16	4,76	1/16	1,6	
SNM422E	SNMN120308E	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SNM422S0820	SNMN120308S02020	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SNM423S0820	SNMN120312S02020	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SNM424S0820	SNMN120316S02020	1/2	12,70	.50	12,70	1/8	3,18	1/16	1,6	

Order example:
ANSI catalog number: SNG633T0820
Insert grade: KY3500

KENDEX negative Inserts

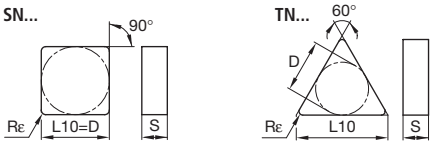
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
SNM	SNM433E												●															●
	SNM433S0820												●															●
	SNM433S1220												●															●
	SNM433T0820										●																	
	SNM434E												●															●
	SNM434S0820												●															●
	SNM434S1220												●															●
	SNM434T0820										●																	
	SNM453T0820										●																	
	SNM454T0820										●																	
SNMX	SNMX453T0820										●																	
	SNMX454T0820										●																	
	SNMX554T0820										●																	
SNU	SNU433																		●									
TNG	TNG221T0820																									●		
	TNG222T0420							●																	●			
	TNG222T0820																									●		
	TNG322		●																●									
	TNG331T0420							●																	●			
	TNG331T0820																									●		
	TNG332T0420							●																	●			
	TNG332T0820						●				●														●			
	TNG333T0420							●																	●			
	TNG333T0820						●				●															●		
	TNG334T0820										●															●		
	TNG352T0420							●																	●			
	TNG352T0820																									●		
	TNG353T0420							●																	●			
	TNG353T0820																									●		
	TNG354T0420							●																	●			
	TNG354T0820																									●		
	TNG432		●																●									
	TNG432T0420							●																	●			
	TNG432T0820										●															●		
	TNG433T0420							●																	●			
	TNG433T0820								●	●	●															●		
	TNG434T0420							●																	●			
	TNG434T0820								●	●	●															●		
	TNG438T0820																									●		
	TNG453T0420																											
	TNG453T0820																									●		
	TNG453T8015																									●		
	TNG454T0420																											
	TNG454T0820																									●		

*Grade KY1525 available Spring 2005.

A172-A180 | A210-A213 | A242 | A6-A19 | A26-A27 | A28-A32 | A33-A37

SN... TN...



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
SNM433E	SNMN120412E	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	SNM
SNM433S0820	SNMN120412S02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNM433S1220	SNMN120412S03020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNM433T0820	SNMN120412T02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SNM434E	SNMN120416E	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNM434S0820	SNMN120416S02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNM434S1220	SNMN120416S03020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNM434T0820	SNMN120416T02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SNM453T0820	SNMN120712T02020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	
SNM454T0820	SNMN120716T02020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNMX453T0820	SNMX120712T02020	1/2	12,70	.50	12,70	5/16	7,94	3/64	1,2	SNMX
SNMX454T0820	SNMX120716T02020	1/2	12,70	.50	12,70	5/16	7,94	1/16	1,6	
SNMX554T0820	SNMX150716T02020	5/8	15,88	.63	15,88	5/16	7,94	1/16	1,6	
SNU433	SNUN120412	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	SNU
TNG221T0820	TNGN110304T02020	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	TNG
TNG222T0420	TNGN110308T01020	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TNG222T0820	TNGN110308T02020	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TNG322	TNGN160308	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TNG331T0420	TNGN160404T01020	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	
TNG331T0820	TNGN160404T02020	3/8	9,53	.65	16,50	3/16	4,76	1/64	0,4	
TNG332T0420	TNGN160408T01020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	
TNG332T0820	TNGN160408T02020	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	
TNG333T0420	TNGN160412T01020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	
TNG333T0820	TNGN160412T02020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	
TNG334T0820	TNGN160416T02020	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	
TNG352T0420	TNGN160708T01020	3/8	9,53	.65	16,50	5/16	7,94	1/32	0,8	
TNG352T0820	TNGN160708T02020	3/8	9,53	.65	16,50	5/16	7,94	1/32	0,8	
TNG353T0420	TNGN160712T01020	3/8	9,53	.65	16,50	5/16	7,94	3/64	1,2	
TNG353T0820	TNGN160712T02020	3/8	9,53	.65	16,50	5/16	7,94	3/64	1,2	
TNG354T0420	TNGN160716T01020	3/8	9,53	.65	16,50	5/16	7,94	1/16	1,6	
TNG354T0820	TNGN160716T02020	3/8	9,53	.65	16,50	5/16	7,94	1/16	1,6	
TNG432	TNGN220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TNG432T0420	TNGN220408T01020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TNG432T0820	TNGN220408T02020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TNG433T0420	TNGN220412T01020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TNG433T0820	TNGN220412T02020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TNG434T0420	TNGN220416T01020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	
TNG434T0820	TNGN220416T02020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	
TNG438T0820	TNGN220432T02020	1/2	12,70	.87	22,00	3/16	4,76	1/8	3,2	
TNG453T0420	TNGN220712T01020	1/2	12,70	.87	22,00	5/16	7,94	3/64	1,2	
TNG453T0820	TNGN220712T02020	1/2	12,70	.87	22,00	5/16	7,94	3/64	1,2	
TNG453T8015	TNGN220712T20015	1/2	12,70	.87	22,00	5/16	7,94	3/64	1,2	
TNG454T0420	TNGN220716T01020	1/2	12,70	.87	22,00	5/16	7,94	1/16	1,6	
TNG454T0820	TNGN220716T02020	1/2	12,70	.87	22,00	5/16	7,94	1/16	1,6	

Order example:
ANSI catalog number: SNM433E
Insert grade: KB9640

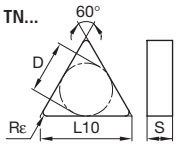
KENDEX negative Inserts

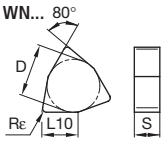
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
TNM	TNM221E												●															●
	TNM221S0820												●															●
	TNM222E												●															●
	TNM222S0820												●															●
	TNM223E												●															●
	TNM223S0820												●															●
	TNM333S0820												●															●
	TNM334S0820												●															●
	TNM433T0820										●																	
	TNM434T0820										●																	
TNU	TNU333																		●									
	TNU432																		●									
	TNU433																		●									
WNGX	WNGX452E																					●						
	WNGX452T0420																					●						
	WNGX452T0820									●	●																	
	WNGX453E																					●						
	WNGX453T0420																					●						
	WNGX453T0820								●	●	●																	
	WNGX454E																					●						
	WNGX454T0420																					●						
	WNGX454T0820								●	●	●																	
WNGX-FW	WNGX452T0420FW									●	●																	
	WNGX453T0420FW								●	●	●																	
	WNGX453T0820FW								●																			
	WNGX454T0420FW									●	●																	
WNMX	WNMX453T0820										●																	
	WNMX454T0820										●																	

*Grade KY1525 available Spring 2005.

A172-A180 | A210-A213 | A242 | A6-A19 | A26-A27 | A28-A32 | A33-A37





ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
TNM221E	TNMN110304E	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	TNM
TNM221S0820	TNMN110304S02020	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TNM222E	TNMN110308E	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TNM222S0820	TNMN110308S02020	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TNM223E	TNMN110312E	1/4	6,35	.43	11,00	1/8	3,18	3/64	1,2	
TNM223S0820	TNMN110312S02020	1/4	6,35	.43	11,00	1/8	3,18	3/64	1,2	
TNM333S0820	TNMN160412S02020	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	
TNM334S0820	TNMN160416S02020	3/8	9,53	.65	16,50	3/16	4,76	1/16	1,6	
TNM433T0820	TNMN220412T02020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TNM434T0820	TNMN220416T02020	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	
TNU333	TNUN160412	3/8	9,53	.65	16,50	3/16	4,76	3/64	1,2	TNU
TNU432	TNUN220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TNU433	TNUN220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
WNGX452E	WNGX080708E	1/2	12,70	.34	8,69	5/16	7,94	1/32	0,8	WNGX
WNGX452T0420	WNGX080708T01020	1/2	12,70	.34	8,69	5/16	7,94	1/32	0,8	
WNGX452T0820	WNGX080708T02020	1/2	12,70	.34	8,69	5/16	7,94	1/32	0,8	
WNGX453E	WNGX080712E	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	
WNGX453T0420	WNGX080712T01020	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	
WNGX453T0820	WNGX080712T02020	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	
WNGX454E	WNGX080716E	1/2	12,70	.34	8,69	5/16	7,94	1/16	1,6	
WNGX454T0420	WNGX080716T01020	1/2	12,70	.34	8,69	5/16	7,94	1/16	1,6	
WNGX454T0820	WNGX080716T02020	1/2	12,70	.34	8,69	5/16	7,94	1/16	1,6	
WNGX452T0420FW	WNGX080708T01020FW	1/2	12,70	.34	8,69	5/16	7,94	1/32	0,8	WNGX-FW
WNGX453T0420FW	WNGX080712T01020FW	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	
WNGX453T0820FW	WNGX080712T02020FW	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	
WNGX454T0420FW	WNGX080716T01020FW	1/2	12,70	.34	8,69	5/16	7,94	1/16	1,6	
WNMX453T0820	WNMX080712T02020	1/2	12,70	.34	8,69	5/16	7,94	3/64	1,2	WNMX
WNMX454T0820	WNMX080716T02020	1/2	12,70	.34	8,69	5/16	7,94	1/16	1,6	

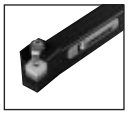
Order example:
ANSI catalog number: TNG438T0820
Insert grade: KY1615

KENDEX positive Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S								H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
CPG	CPG421											●					●							●				
	CPG421E															●												
	CPG422											●					●							●				
	CPG422E															●												
CPG	CPG421													●				●										
	CPG422													●				●										
RCG	RCG45T0820																									●		
	RCG45T8015																									●		
RCGV	RCGV23	●	●	●	●									●	●			●		●								
	RCGV23E																				●	●						
	RCGV35	●	●	●	●									●	●			●		●								
	RCGV35E																				●	●				●		
	RCGV35T0420							●													●	●			●	●		
	RCGV35T0820																									●		
	RCGV35T2815																									●		
	RCGV35T4020																									●		
	RCGV35T8020																									●		
	RCGV45	●	●	●	●					●	●			●	●			●		●								
	RCGV45E																				●	●				●		
	RCGV45S8015							●																	●			
	RCGV45T0420							●													●	●			●			
	RCGV45T0820									●																●		
	RCGV45T2815																									●		
	RCGV45T4015																									●		
	RCGV45T8015																									●		
	RCGX151000T20015																									●		
	RCGX191000T20015																									●		
	RCGV88T8015																									●		
RPG	RPG32E																					●						
	RPG32T0420																									●		
	RPG42													●				●										
	RPG43E																				●	●	●					
	RPG43T0420																									●		

*Grade KY1525 available Spring 2005.


A181-A184

A214-A215

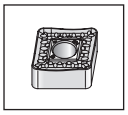
A243

A252-A253

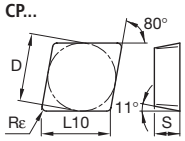
A6-A19

A26-A27

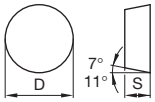
A28-A32


A33-A37

CP...



RC.../RP...



.C.. : 7°
.P.. : 11°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
CPG421	CPGN120304	1/2	12,70	.51	12,90	1/8	3,18	1/64	0,4	CPG
CPG421E	CPGN120304E	1/2	12,70	.51	12,90	1/8	3,18	1/64	0,4	
CPG422	CPGN120308	1/2	12,70	.51	12,90	1/8	3,18	1/32	0,8	
CPG422E	CPGN120308E	1/2	12,70	.51	12,90	1/8	3,18	1/32	0,8	
CPG421	CPGN120304	1/2	12,70	.51	12,90	1/8	3,18	1/64	0,4	CPG
CPG422	CPGN120308	1/2	12,70	.51	12,90	1/8	3,18	1/32	0,8	
RCG45T0820	RCGN120700T02020	1/2	12,70	-	-	5/16	7,94	-	-	RCG
RCG45T8015	RCGN120700T20015	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV23	RCGX060400	1/4	6,35	-	-	3/16	4,76	-	-	RCGV
RCGV23E	RCGX060400E	1/4	6,35	-	-	3/16	4,76	-	-	
RCGV35	RCGX090700	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35E	RCGX090700E	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35T0420	RCGX090700T01020	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35T0820	RCGX090700T02020	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35T2815	RCGX090700T07015	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35T4020	RCGX090700T10015	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV35T8020	RCGX090700T20015	3/8	9,53	-	-	5/16	7,94	-	-	
RCGV45	RCGX120700	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45E	RCGX120700E	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45S8015	RCGX120700S20015	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45T0420	RCGX120700T01020	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45T0820	RCGX120700T02020	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45T2815	RCGX120700T07015	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45T4015	RCGX120700T10015	1/2	12,70	-	-	5/16	7,94	-	-	
RCGV45T8015	RCGX120700T20015	1/2	12,70	-	-	5/16	7,94	-	-	
RCGX151000T20015	RCGX151000T20015	5/8	15,88	-	-	.394	10,00	-	-	
RCGX191000T20015	RCGX191000T20015	3/4	19,05	-	-	.394	10,00	-	-	
RCGV88T8015	RCGX251200T20015	1	25,40	-	-	1/2	12,70	-	-	
RPG32E	RPGN090300E	3/8	9,53	-	-	1/8	3,18	-	-	RPG
RPG32T0420	RPGN090300T01020	3/8	9,53	-	-	1/8	3,18	-	-	
RPG42	RPGN120300	1/2	12,70	-	-	1/8	3,18	-	-	
RPG43E	RPGN120400E	1/2	12,70	-	-	3/16	4,76	-	-	
RPG43T0420	RPGN120400T01020	1/2	12,70	-	-	3/16	4,76	-	-	

Order example:
ANSI catalog number: CPG421
Insert grade: KD100

KENDEX positive Inserts

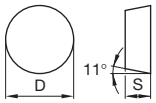
Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S								H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
RPGV	RPGV23													●				●										
	RPGV35	●		●	●									●	●			●		●								
	RPGV35E																				●	●						
	RPGV35T0420																				●	●	●					
	RPGV45													●				●										
	RPGV45E																					●						
	RPGV45T0420																				●	●	●					
	RPGV45T0820									●																		
SCG	SCG332T0220							●																	●			
	SCG333T0220							●																	●			
	SCG433T0220							●																	●			
	SCG433T0420													●											●			
	SCG434T0220							●																	●			
	SCG444T0420																									●		
SCG-FW	SCG332EFW								●																			
	SCG332FW									●	●																	
	SCG432EFW								●																			
	SCG432FW									●	●																	
SCU	SCU433T0220																									●		
	SCU434T0220																									●		
SPG	SPG322																●											
	SPG322E															●												
	SPG422											●												●				
	SPG422F																●											
	SPG422E											●				●								●				
SPG	SPG321	●	●	●	●										●					●								
	SPG322	●	●	●	●									●	●			●		●								
	SPG322T0420							●																	●	●		
	SPG323	●	●	●	●										●					●								
	SPG323T0420																									●		
	SPG421	●	●	●	●									●	●			●		●								
	SPG421T0420																									●		
	SPG422	●	●	●	●	●								●	●			●		●								
	SPG422T0420							●																	●	●		
	SPG422T0820								●		●																	
	SPG423	●	●	●	●										●					●								
	SPG423T0420							●																	●	●		
	SPG423T0820								●		●																	
	SPG424	●	●	●	●										●					●								
	SPG432		●																									
	SPG432T0820										●																	
	SPG433	●	●	●	●									●	●			●		●								
	SPG433T0420							●																	●			
	SPG433T0820								●		●															●		
	SPG434T0420							●																	●	●		
	SPG434T0820								●		●																	

*Grade KY1525 available Spring 2005.

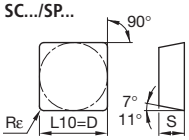
A181-A184 | A214-A215 | A243 | A252-A253 | A6-A19 | A26-A27 | A28-A32 | A33-A37

RP...

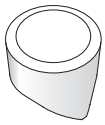


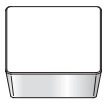
SC.../SP...

.C.. : 7°
.P.. : 11°



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
RPGV23	RPGX060400	1/4	6,35	-	-	3/16	4,76	-	-	RPGV
RPGV35	RPGX090700	3/8	9,53	-	-	5/16	7,94	-	-	
RPGV35E	RPGX090700E	3/8	9,53	-	-	5/16	7,94	-	-	
RPGV35T0420	RPGX090700T01020	3/8	9,53	-	-	5/16	7,94	-	-	
RPGV45	RPGX120700	1/2	12,70	-	-	5/16	7,94	-	-	
RPGV45E	RPGX120700E	1/2	12,70	-	-	5/16	7,94	-	-	
RPGV45T0420	RPGX120700T01020	1/2	12,70	-	-	5/16	7,94	-	-	
RPGV45T0820	RPGX120700T02020	1/2	12,70	-	-	5/16	7,94	-	-	
SCG332T0220	SCGN090408T00520	3/8	9,53	.38	9,53	3/16	4,76	1/32	0,8	SCG
SCG333T0220	SCGN090412T00520	3/8	9,53	.38	9,53	3/16	4,76	3/64	1,2	
SCG433T0220	SCGN120412T00520	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SCG433T0420	SCGN120412T01020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SCG434T0220	SCGN120416T00520	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SCG444T0420	SCGN120416T01020	1/2	12,70	.50	12,70	1/4	6,35	1/16	1,6	
SCG332EFW	SCGN090408EFW	3/8	9,53	.38	9,53	3/16	4,76	1/32	0,8	SCG-FW
SCG332FW	SCGN090408EFW	3/8	9,53	.38	9,53	3/16	4,76	1/32	0,8	
SCG432EFW	SCGN120408EFW	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SCG432FW	SCGN120408EFW	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SCU433T0220	SCUN120412T00520	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	SCU
SCU434T0220	SCUN120416T00520	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SPG322	SPGN090308F	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	SPG
SPG322E	SPGN090308E	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPG422	SPGN120308	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG422F	SPGN120308F	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG422E	SPGN120308E	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG321	SPGN090304	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	SPG
SPG322	SPGN090308	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPG322T0420	SPGN090308T01020	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPG323	SPGN090312	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SPG323T0420	SPGN090312T01020	3/8	9,53	.38	9,53	1/8	3,18	3/64	1,2	
SPG421	SPGN120304	1/2	12,70	.50	12,70	1/8	3,18	1/64	0,4	
SPG421T0420	SPGN120304T01020	1/2	12,70	.50	12,70	1/8	3,18	1/64	0,4	
SPG422	SPGN120308	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG422T0420	SPGN120308T01020	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG422T0820	SPGN120308T02020	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPG423	SPGN120312	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SPG423T0420	SPGN120312T01020	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SPG423T0820	SPGN120312T02020	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SPG424	SPGN120316	1/2	12,70	.50	12,70	1/8	3,18	1/16	1,6	
SPG432	SPGN120408	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SPG432T0820	SPGN120408T02020	1/2	12,70	.50	12,70	3/16	4,76	1/32	0,8	
SPG433	SPGN120412	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SPG433T0420	SPGN120412T01020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SPG433T0820	SPGN120412T02020	1/2	12,70	.50	12,70	3/16	4,76	3/64	1,2	
SPG434T0420	SPGN120416T01020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	
SPG434T0820	SPGN120416T02020	1/2	12,70	.50	12,70	3/16	4,76	1/16	1,6	





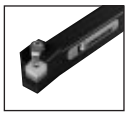
Order example:
ANSI catalog number: RPGV23
Insert grade: K313

KENDEX positive Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
SPG	SPG631T30220																									●		
	SPG632		●																									
	SPG633	●	●	●	●									●	●			●		●								
	SPG633T0420																									●		
	SPG634T0820										●																	
	SPG638		●																									
SPGF	SPGF321	●	●	●	●										●					●								
	SPGF322	●	●	●	●										●					●								
	SPGF422	●	●	●	●										●					●								
SPMR	SPMR321		●			●																						
	SPMR322		●			●																						
	SPMR421		●			●																						
	SPMR422		●			●																						
SPU	SPU322		●			●													●									
	SPU322T0220						●																			●		
	SPU421		●			●													●									
	SPU421T0220																									●		
	SPU422		●			●													●									
	SPU422T0220						●																			●		
	SPU423		●			●													●									
	SPU423T0220																									●		
	SPU633		●			●													●									
	SPU634		●			●																						
TPG	TPGE732											●												●				
	TPG221											●												●				
	TPG221F																●											
	TPG221E															●												
	TPG222											●												●				
	TPG222F																●											
	TPG222E															●												
	TPG321											●												●				
	TPG321F																●											
	TPG321E															●												
	TPG322											●												●				
	TPG322F																●											
	TPG322E															●												
	TPG323																●											
	TPG431																●											
	TPG432											●					●							●				
	TPG433																●											
TPG-M	TPG221EM																										●	
	TPG221S0420M																										●	
	TPG222EM																										●	
	TPG222S0420M																										●	
	TPG321EM																										●	
	TPG321S0420M																										●	
	TPG322EM																										●	
	TPG322S0420M																										●	

*Grade KY1525 available Spring 2005.


A181-A184

A214-A215

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A252-A253

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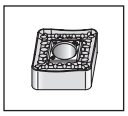
A26-A27

A28-A32


A33-A37

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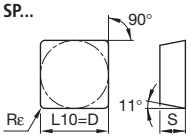

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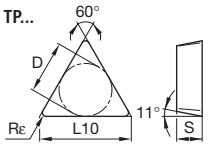


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
SPG631T0220	SPGN190404T00520	3/4	19,05	.75	19,05	3/16	4,76	1/64	0,4	SPG
SPG632	SPGN190408	3/4	19,05	.75	19,05	3/16	4,76	1/32	0,8	
SPG633	SPGN190412	3/4	19,05	.75	19,05	3/16	4,76	3/64	1,2	
SPG633T0420	SPGN190412T01020	3/4	19,05	.75	19,05	3/16	4,76	3/64	1,2	
SPG634T0820	SPGN190416T02020	3/4	19,05	.75	19,05	3/16	4,76	1/16	1,6	
SPG638	SPGN190432	3/4	19,05	.75	19,05	3/16	4,76	1/8	3,2	
SPGF321	SPGR090304K	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	SPGF
SPGF322	SPGR090308K	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPGF422	SPGR120308K	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPMR321	SPMR090304	3/8	9,53	.38	9,53	1/8	3,18	1/64	0,4	SPMR
SPMR322	SPMR090308	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPMR421	SPMR120304	1/2	12,70	.50	12,70	1/8	3,18	1/64	0,4	
SPMR422	SPMR120308	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPU322	SPUN090308	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	SPU
SPU322T0220	SPUN090308T00520	3/8	9,53	.38	9,53	1/8	3,18	1/32	0,8	
SPU421	SPUN120304	1/2	12,70	.50	12,70	1/8	3,18	1/64	0,4	
SPU421T0220	SPUN120304T00520	1/2	12,70	.50	12,70	1/8	3,18	1/64	0,4	
SPU422	SPUN120308	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPU422T0220	SPUN120308T00520	1/2	12,70	.50	12,70	1/8	3,18	1/32	0,8	
SPU423	SPUN120312	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SPU423T0220	SPUN120312T00520	1/2	12,70	.50	12,70	1/8	3,18	3/64	1,2	
SPU633	SPUN190412	3/4	19,05	.75	19,05	3/16	4,76	3/64	1,2	
SPU634	SPUN190416	3/4	19,05	.75	19,05	3/16	4,76	1/16	1,6	
TPGE732	TPGN090208	7/32	5,56	.38	9,63	3/32	2,38	1/32	0,8	TPG
TPG221	TPGN110304	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG221F	TPGN110304F	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG221E	TPGN110304E	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG222	TPGN110308	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG222F	TPGN110308F	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG222E	TPGN110308E	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG321	TPGN160304	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG321F	TPGN160304F	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG321E	TPGN160304E	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG322	TPGN160308	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322F	TPGN160308F	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322E	TPGN160308E	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG323	TPGN160312	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	
TPG431	TPGN220404	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	
TPG432	TPGN220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPG433	TPGN220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TPG221EM	TPGN110304EM	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	TPG-M
TPG221S0420M	TPGN110304S01020M	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG222EM	TPGN110308EM	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG222S0420M	TPGN110308S01020M	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG321EM	TPGN160304EM	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG321S0420M	TPGN160304S01020M	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG322EM	TPGN160308EM	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322S0420M	TPGN160308S01020M	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	

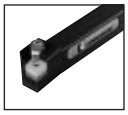
Order example:
ANSI catalog number: SPG631T0220
Insert grade: KY1615

KENDEX positive Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
TPG	TPGE521		●											●				●										
	TPGE731		●																									
	TPG221	●	●	●	●									●	●			●		●								
	TPG221T0420							●																	●	●		
	TPG222	●	●	●	●									●	●			●		●								
	TPG222T0420							●																	●	●		
	TPG223T0420																									●		
	TPG3205	●	●	●	●									●	●			●		●								
	TPG321	●	●	●	●									●	●			●		●								
	TPG321T0220																									●		
	TPG321T0420							●																	●	●		
	TPG322	●	●	●	●	●								●	●			●		●								
	TPG322E																					●						
	TPG322T0220																									●		
	TPG322T0420							●																	●	●		
	TPG322T0820								●		●																	
	TPG323	●	●	●	●									●	●			●		●								
	TPG323T0420							●																	●	●		
	TPG323T0820								●		●																	
	TPG324	●	●	●	●									●	●			●		●								
	TPG324T0420																									●		
	TPG332		●																									
	TPG431	●	●	●	●									●	●			●		●								
	TPG431T0420																									●		
	TPG432	●	●	●	●	●								●	●			●		●								
	TPG432T0420																									●		
	TPG432T0820								●		●																	
	TPG433	●	●	●	●										●					●								
	TPG434	●	●	●	●										●					●								
	TPG434T0420																									●		
	TPG436		●																									
	TPG438		●																									
	TPG542		●																									
	TPG543		●																									
	TPG544		●																									
TPGF	TPGF221	●	●	●	●										●				●	●								
	TPGF222	●	●	●	●										●					●								
	TPGF321	●	●	●	●										●				●	●								
	TPGF322	●	●	●	●										●					●								
	TPGF431	●	●	●	●										●					●								
	TPGF432	●	●	●	●										●					●								
TPMR	TPMR731		●																									
	TPMR221		●			●																						
	TPMR222		●			●																						
	TPMR321		●			●																						
	TPMR322		●			●																						
	TPMR323		●			●																						
	TPMR432		●																									
	TPMR433		●																									

*Grade KY1525 available Spring 2005.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A214-A215

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A252-A253

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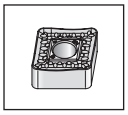
A26-A27

A28-A32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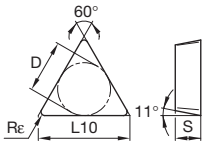


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	
TPGE521	TPGN060104	5/32	3,97	.27	6,88	1/16	1,59	1/64	0,4	TPG
TPG3E731	TPGN090204	7/32	5,56	.38	9,63	3/32	2,38	1/64	0,4	
TPG221	TPGN110304	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG221T0420	TPGN110304T01020	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPG222	TPGN110308	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG222T0420	TPGN110308T01020	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPG223T0420	TPGN110312T01020	1/4	6,35	.43	11,00	1/8	3,18	3/64	1,2	
TPG3205	TPGN160302	3/8	9,53	.65	16,50	1/8	3,18	.008	0,2	
TPG321	TPGN160304	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG321T0220	TPGN160304T00520	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG321T0420	TPGN160304T01020	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPG322	TPGN160308	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322E	TPGN160308E	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322T0220	TPGN160308T00520	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322T0420	TPGN160308T01020	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG322T0820	TPGN160308T02020	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPG323	TPGN160312	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	
TPG323T0420	TPGN160312T01020	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	
TPG323T0820	TPGN160312T02020	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	
TPG324	TPGN160316	3/8	9,53	.65	16,50	1/8	3,18	1/16	1,6	
TPG324T0420	TPGN160316T01020	3/8	9,53	.65	16,50	1/8	3,18	1/16	1,6	
TPG332	TPGN160408	3/8	9,53	.65	16,50	3/16	4,76	1/32	0,8	
TPG431	TPGN220404	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	
TPG431T0420	TPGN220404T01020	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	
TPG432	TPGN220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPG432T0420	TPGN220408T01020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPG432T0820	TPGN220408T02020	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPG433	TPGN220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TPG434	TPGN220416	1/2	12,70	.87	22,00	3/16	4,76	1/16	1,6	
TPG434T0420	TPGN220416T01020	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	
TPG436	TPGN220424	1/2	12,70	.87	22,00	3/16	4,76	3/32	2,4	
TPG438	TPGN220432	1/2	12,70	.87	22,00	3/16	4,76	1/8	3,2	
TPG542	TPGN270608	5/8	15,88	1.08	27,50	1/4	6,35	1/32	0,8	
TPG543	TPGN270612	5/8	15,88	1.08	27,50	1/4	6,35	3/64	1,2	
TPG544	TPGN270616	5/8	15,88	1.08	27,50	1/4	6,35	1/16	1,6	
TPGF221	TPGR110304K	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	TPGF
TPGF222	TPGR110308K	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPGF321	TPGR160304K	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPGF322	TPGR160308K	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPGF431	TPGR220404K	1/2	12,70	.87	22,00	3/16	4,76	1/64	0,4	
TPGF432	TPGR220408K	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPMR731	TPMR090204	7/32	5,56	.38	9,63	3/32	2,38	1/64	0,4	TPMR
TPMR221	TPMR110304	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4	
TPMR222	TPMR110308	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8	
TPMR321	TPMR160304	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4	
TPMR322	TPMR160308	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8	
TPMR323	TPMR160312	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2	
TPMR432	TPMR220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8	
TPMR433	TPMR220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2	

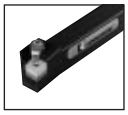
Order example:
ANSI catalog number: TPGE521
Insert grade: KC8050

KENDEX positive Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT																									
		P		M	K								N				S							H			
		KC5010	KC8050	KC5010	KC5010	KC9315	AC5	KY4400	KY1310	KY3400	KY3500	KD120	KB9640	K313	KC5010	KD1405	KD100	K313	K68	KC5010	KY2100	KY1540	KY1525*	KD120	KY4400	KY1615	KB9610	KB9640
TPU	TPU221					●													●									
	TPU221T0220																								●			
	TPU222					●													●									
	TPU222T0220																								●			
	TPU321		●			●													●									
	TPU321T0220						●																		●			
	TPU322		●			●													●									
	TPU322T0220						●																		●			
	TPU323		●			●																						
	TPU323T0220																								●			
	TPU432		●			●													●									
	TPU433		●			●													●									

*Grade KY1525 available Spring 2005.


A181-A184

A214-A215

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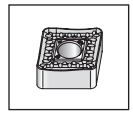
A33-A37

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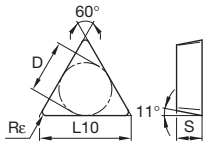
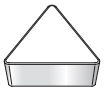


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm
TPU221	TPUN110304	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4
TPU221T0220	TPUN110304T00520	1/4	6,35	.43	11,00	1/8	3,18	1/64	0,4
TPU222	TPUN110308	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8
TPU222T0220	TPUN110308T00520	1/4	6,35	.43	11,00	1/8	3,18	1/32	0,8
TPU321	TPUN160304	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4
TPU321T0220	TPUN160304T00520	3/8	9,53	.65	16,50	1/8	3,18	1/64	0,4
TPU322	TPUN160308	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8
TPU322T0220	TPUN160308T00520	3/8	9,53	.65	16,50	1/8	3,18	1/32	0,8
TPU323	TPUN160312	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2
TPU323T0220	TPUN160312T00520	3/8	9,53	.65	16,50	1/8	3,18	3/64	1,2
TPU432	TPUN220408	1/2	12,70	.87	22,00	3/16	4,76	1/32	0,8
TPU433	TPUN220412	1/2	12,70	.87	22,00	3/16	4,76	3/64	1,2

TPU



Order example:
ANSI catalog number: TPU221
Insert grade: KC9315

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K					N					S						H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
CCGW -F -S	CCMW3251F																			●												
	CCGW431S0415															●										●						
	CCGW432S0415															●●										●●						
	CCGW433S0415															●										●						
CCGW-FWM	CCGW21505EFWM																												●	●		
	CCGW21505S0415FWM																												●			
	CCGW2151EFWM																												●	●		
	CCGW2151S0415FWM																												●			
	CCGW2152EFWM																												●			
	CCGW2152S0415FWM																												●			
	CCGW3251EFWM																													●		
	CCGW3252EFWM																													●		
CCGW-FWMT	CCGW3251EFWMT																												●			
	CCGW3251S0415FWMT																												●			
	CCGW3252EFWMT																												●			
	CCGW3252S0415FWMT																												●			
CCGW-M	CCGW21505EM																												●	●		
	CCGW21505S0415M																												●			
	CCGW2151EM																												●			
	CCGW2151S0415M																												●	●		
	CCGW2152EM																												●			
	CCGW2152S0415M																												●			
	CCGW3251S0415M																													●		
	CCGW3252S0415M																													●		
CCGW-MT	CCGW3251EMT																												●			
	CCGW3251S0415MT																												●			
	CCGW3252EMT																												●			
	CCGW3252S0415MT																												●			
CDHB	CDHB120601																			●										●		
	CDHB120605																			●										●		
	CDHB12061																			●										●		
CPGB	CPGB32505															●										●						
	CPGB32505F																			●												
	CPGB3251															●										●						
	CPGB3251F																			●												
	CPGB3252															●										●						
	CPGB3252F																			●												
CPGM-F	CPGM21505F																			●												
	CPGM2151F																			●												
	CPGM2152F																			●												
	CPGM32505F																			●												
	CPGM3251F																			●												
	CPGM3252F																			●												

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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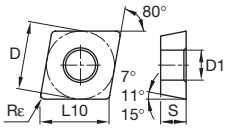

.C.. : 7°
.P.. : 11°
.D.. : 15°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CCMW3251F	CCMW09T304F	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CCGW -F -S
CCGW431S0415	CCGW120404S01015	1/2	12,70	.508	12,90	3/16	4,76	1/64	0,4	.217	5,50	
CCGW432S0415	CCGW120408S01015	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	
CCGW433S0415	CCGW120412S01015	1/2	12,70	.508	12,90	3/16	4,76	3/64	1,2	.217	5,50	
CCGW21505EFWM	CCGW060202EFWM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CCGW-FWM
CCGW21505S0415FWM	CCGW060202S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CCGW2151EFWM	CCGW060204EFWM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGW2151S0415FWM	CCGW060204S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGW2152EFWM	CCGW060208EFWM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGW2152S0415FWM	CCGW060208S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGW3251EFWM	CCGW09T304EFWM	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGW3252EFWM	CCGW09T308EFWM	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGW3251EFWMT	CCGW09T304EFWMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CCGW-FWMT
CCGW3251S0415FWMT	CCGW09T304S01015FWMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGW3252EFWMT	CCGW09T308EFWMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGW3252S0415FWMT	CCGW09T308S01015FWMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGW21505EM	CCGW060202EM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CCGW-M
CCGW21505S0415M	CCGW060202S01015M	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CCGW2151EM	CCGW060204EM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGW2151S0415M	CCGW060204S01015M	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGW2152EM	CCGW060208EM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGW2152S0415M	CCGW060208S01015M	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGW3251S0415M	CCGW09T304S01015M	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGW3252S0415M	CCGW09T308S01015M	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGW3251EMT	CCGW09T304EMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CCGW-MT
CCGW3251S0415MT	CCGW09T304S01015MT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGW3252EMT	CCGW09T308EMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGW3252S0415MT	CCGW09T308S01015MT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CDHB120601	CDHBS4T0S0	5/32	3,97	.159	4,03	.040	1,02	.002	0,1	.083	2,10	CDHB
CDHB120605	CDHBS4T002	5/32	3,97	.159	4,03	.040	1,02	.008	0,2	.083	2,10	
CDHB12061	CDHBS4T004	5/32	3,97	.159	4,03	.040	1,02	1/64	0,4	.083	2,10	
CPGB32505	CPGB09T302	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	CPGB
CPGB32505F	CPGB09T302F	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CPGB3251	CPGB09T304	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGB3251F	CPGB09T304F	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGB3252	CPGB09T308	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGB3252F	CPGB09T308F	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGM21505F	CPGT060202F	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPGM-F
CPGM2151F	CPGT060204F	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGM2152F	CPGT060208F	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGM32505F	CPGH09T302F	3/8	9,53	.381	9,67	5/32	3,97	.004	0,2	.173	4,40	
CPGM3251F	CPGH09T304F	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGM3252F	CPGH09T308F	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: CCMW3251F
Insert grade: KD100

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					KENNA PERFECT M					KENNA PERFECT K					KENNA PERFECT N					KENNA PERFECT S							KENNA PERFECT H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
CPGW	CPGW21505															●			●								●					
	CPGW21505E																			●												
	CPGW21505F																															
	CPGW2151															●			●								●					
	CPGW2151E																			●												
	CPGW2151F																															
	CPGW2152															●			●								●					
	CPGW2152E																			●												
	CPGW2152F																															
	CPGW3251															●			●								●					
	CPGW3251E																			●												
	CPGW3251F																															
	CPGW3252															●			●								●					
	CPGW3252E																			●												
	CPGW3252F																															
CPGW-FWM	CPGW21505EFWM																												●			
	CPGW21505S0415FWM																												●			
	CPGW2151EFWM																												●			
	CPGW2151S0415FWM																												●			
	CPGW2152EFWM																												●			
	CPGW2152S0415FWM																												●			
CPGW-FWMT	CPGW3251EFWMT																												●			
	CPGW3251S0415FWMT																												●			
	CPGW3252EFWMT																												●			
	CPGW3252S0415FWMT																												●			
CPGW-M	CPGW21505EM																												●	●		
	CPGW21505S0415M																												●			
	CPGW2151EM																												●			
	CPGW2151S0415M																												●	●		
	CPGW2152EM																												●			
	CPGW2152S0415M																												●	●		
	CPGW3251S0415M																													●		
	CPGW3252S0415M																													●		
CPGW-MT	CPGW3251EMT																												●			
	CPGW3251S0415MT																												●			
	CPGW3252EMT																												●			
	CPGW3252S0415MT																												●			
CCGT-HP	CCGT21505HP		●					●	●				●					●	●			●		●	●							
	CCGT2151HP		●					●	●				●					●	●			●		●	●							
	CCGT2152HP		●					●	●				●					●	●			●		●	●							
	CCGT32505HP		●					●	●				●					●	●			●		●	●							
	CCGT3251HP		●					●	●				●					●	●			●		●	●							
	CCGT3252HP		●					●	●				●					●	●			●		●	●							
	CCGT430HP		●					●	●				●						●					●	●							
	CCGT4305HP		●					●	●				●						●					●	●							
	CCGT431HP		●					●	●				●					●	●			●		●	●							
	CCGT432HP		●					●	●				●					●	●			●		●	●							

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

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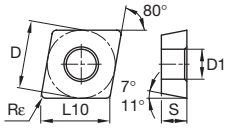


.C.. : 7°
.P.. : 11°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CPGW21505	CPGW060202	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPGW
CPGW21505E	CPGW060202E	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPGW21505F	CPGW060202F	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPGW2151	CPGW060204	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2151E	CPGW060204E	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2151F	CPGW060204F	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2152	CPGW060208	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW2152E	CPGW060208E	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW2152F	CPGW060208F	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW3251	CPGW09T304	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3251E	CPGW09T304E	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3251F	CPGW09T304F	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3252	CPGW09T308	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW3252E	CPGW09T308E	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW3252F	CPGW09T308F	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW21505EFWM	CPGW060202EFWM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPGW-FWM
CPGW21505S0415FWM	CPGW060202S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPGW2151EFWM	CPGW060204EFWM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2151S0415FWM	CPGW060204S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2152EFWM	CPGW060208EFWM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW2152S0415FWM	CPGW060208S01015FWM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW3251EFWMT	CPGW09T304EFWMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CPGW-FWMT
CPGW3251S0415FWMT	CPGW09T304S01015FWMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3252EFWMT	CPGW09T308EFWMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW3252S0415FWMT	CPGW09T308S01015FWMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW21505EM	CPGW060202EM	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPGW-M
CPGW21505S0415M	CPGW060202S01015M	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPGW2151EM	CPGW060204EM	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2151S0415M	CPGW060204S01015M	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGW2152EM	CPGW060208EM	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW2152S0415M	CPGW060208S01015M	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGW3251S0415M	CPGW09T304S01015M	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3252S0415M	CPGW09T308S01015M	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW3251EMT	CPGW09T304EMT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CPGW-MT
CPGW3251S0415MT	CPGW09T304S01015MT	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGW3252EMT	CPGW09T308EMT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGW3252S0415MT	CPGW09T308S01015MT	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGT21505HP	CCGT060202HP	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CCGT-HP
CCGT2151HP	CCGT060204HP	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGT2152HP	CCGT060208HP	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGT32505HP	CCGT09T302HP	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CCGT3251HP	CCGT09T304HP	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGT3252HP	CCGT09T308HP	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCGT430HP	CCGT120401HP	1/2	12,70	.508	12,90	3/16	4,76	.004	0,1	.217	5,50	
CCGT4305HP	CCGT120402HP	1/2	12,70	.508	12,90	3/16	4,76	.008	0,2	.217	5,50	
CCGT431HP	CCGT120404HP	1/2	12,70	.508	12,90	3/16	4,76	1/64	0,4	.217	5,50	
CCGT432HP	CCGT120408HP	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	

Order example:
ANSI catalog number: CPGW21505
Insert grade: KD120

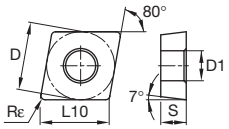
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
CCGT-LF	CCGT215X0LF								●															●							
	CCGT2150LF		●					●	●				●				●	●			●		●	●								
	CCGT21505LF		●					●	●				●				●	●			●		●	●								
	CCGT2151LF		●					●	●				●				●	●			●		●	●								
	CCGT2152LF		●					●	●				●				●	●			●		●	●								
	CCGT325X0LF								●															●							
	CCGT3250LF		●					●	●				●				●	●			●		●	●								
	CCGT32505LF		●					●	●				●				●	●			●		●	●								
	CCGT3251LF		●					●	●				●				●	●			●		●	●								
	CCGT3252LF		●					●	●				●				●	●			●		●	●								
CCMT-11	CCMT215111	●					●					●																			
	CCMT325111	●					●					●																			
	CCMT325211	●					●					●																			
	CCMT43111	●					●					●																			
	CCMT43211	●					●					●																			
CCMT-FW	CCMT21505FW	●	●				●	●				●	●										●								
	CCMT2151FW	●	●				●	●		●		●	●	●									●		●						
	CCMT2152FW	●	●				●	●		●		●	●	●									●		●						
	CCMT3251FW	●	●				●	●		●		●	●	●									●		●						
	CCMT3252FW	●	●				●	●		●		●	●	●									●		●						
CCMT-LF	CCMT21505LF	●	●				●	●	●			●	●				●				●		●	●							●	
	CCMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	CCMT2152LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	CCMT32505LF	●	●				●	●	●			●	●				●				●		●	●								
	CCMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	CCMT3252LF	●	●	●	●	●	●	●		●	●	●	●	●			●				●	●	●		●	●					●	●
	CCMT431LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	CCMT432LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	CCMT433LF		●	●	●	●		●	●	●	●		●	●									●	●	●	●						●
CCMT-MF	CCMT2151MF			●	●	●				●	●			●	●										●	●					●	
	CCMT3251MF			●	●	●				●	●			●	●										●	●					●	
	CCMT3252MF			●	●	●			●	●	●			●	●										●	●					●	
	CCMT3253MF			●	●	●				●	●			●	●											●						
	CCMT432MF			●	●	●				●	●			●	●											●					●	
	CCMT433MF			●	●	●			●	●	●			●	●										●	●						
CCMT-MW	CCMT3251MW	●	●			●	●	●		●		●	●	●									●		●							
	CCMT3252MW	●	●			●	●	●		●		●	●	●									●		●							
	CCMT431MW	●	●			●	●	●		●		●	●	●									●		●							
	CCMT432MW	●	●			●	●	●		●		●	●	●									●		●							

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

CC..



.C.. : 7°
.P. : 11°
.D.. : 15°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CCGT215X0LF	CCGT0602X0LF	1/4	6,35	.254	6,45	3/32	2,38	.0015	0,04	.110	2,80	CCGT-LF
CCGT2150LF	CCGT060201LF	1/4	6,35	.254	6,45	3/32	2,38	.004	0,1	.110	2,80	
CCGT21505LF	CCGT060202LF	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CCGT2151LF	CCGT060204LF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCGT2152LF	CCGT060208LF	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCGT325X0LF	CCGT09T3X0LF	3/8	9,53	.381	9,67	5/32	3,97	.0015	0,04	.173	4,40	
CCGT3250LF	CCGT09T301LF	3/8	9,53	.381	9,67	5/32	3,97	.004	0,1	.173	4,40	
CCGT32505LF	CCGT09T302LF	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CCGT3251LF	CCGT09T304LF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCGT3252LF	CCGT09T308LF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT215111	CCMT06020411	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	CCMT-11
CCMT325111	CCMT09T30411	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCMT325211	CCMT09T30811	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT43111	CCMT12040411	1/2	12,70	.508	12,90	3/16	4,76	1/64	0,4	.217	5,50	
CCMT43211	CCMT12040811	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	
CCMT21505FW	CCMT060202FW	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CCMT-FW
CCMT2151FW	CCMT060204FW	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCMT2152FW	CCMT060208FW	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCMT3251FW	CCMT09T304FW	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCMT3252FW	CCMT09T308FW	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT21505LF	CCMT060202LF	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CCMT-LF
CCMT2151LF	CCMT060204LF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CCMT2152LF	CCMT060208LF	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CCMT32505LF	CCMT09T302LF	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CCMT3251LF	CCMT09T304LF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCMT3252LF	CCMT09T308LF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT431LF	CCMT120404LF	1/2	12,70	.508	12,90	3/16	4,76	1/64	0,4	.217	5,50	
CCMT432LF	CCMT120408LF	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	
CCMT433LF	CCMT120412LF	1/2	12,70	.508	12,90	3/16	4,76	3/64	1,2	.217	5,50	
CCMT2151MF	CCMT060204MF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	CCMT-MF
CCMT3251MF	CCMT09T304MF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCMT3252MF	CCMT09T308MF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT3253MF	CCMT09T312MF	3/8	9,53	.381	9,67	5/32	3,97	3/64	1,2	.173	4,40	
CCMT432MF	CCMT120408MF	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	
CCMT433MF	CCMT120412MF	1/2	12,70	.508	12,90	3/16	4,76	3/64	1,2	.217	5,50	
CCMT3251MW	CCMT09T304MW	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CCMT-MW
CCMT3252MW	CCMT09T308MW	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CCMT431MW	CCMT120404MW	1/2	12,70	.508	12,90	3/16	4,76	1/64	0,4	.217	5,50	
CCMT432MW	CCMT120408MW	1/2	12,70	.508	12,90	3/16	4,76	1/32	0,8	.217	5,50	

Order example:
ANSI catalog number: CCGT215X0LF
Insert grade: KC5025

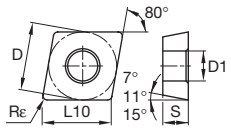
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K					N					S						H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
CCMT-UF	CCMT2151UF		●	●	●			●					●										●								●	
	CCMT32505UF		●	●	●			●					●										●									
	CCMT3251UF		●	●	●			●					●										●								●	
	CCMT3252UF		●	●	●			●					●										●								●	
CDHB	CDHB120601	●	●				●	●	●			●	●										●	●								
	CDHB120605	●	●				●	●	●			●	●				●				●		●	●								
	CDHB12061	●	●				●	●	●			●	●				●				●		●	●								
CDHH	CDHH120605L	●	●				●	●	●			●	●										●	●								
	CDHH120605R	●	●				●	●	●			●	●										●	●								
	CDHH12061L	●	●				●	●	●			●	●										●	●								
	CDHH12061R	●	●				●	●	●			●	●										●	●								
CPGM	CPGM3250	●	●				●	●	●			●	●										●	●								
	CPGM32505	●	●				●	●	●			●	●				●				●		●	●								
	CPGM3251	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●						
	CPGM3252	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●			●		●	●	●	●						
CPGT-HP	CPGT21505HP		●					●	●				●					●					●	●								
	CPGT2151HP		●					●	●				●					●					●	●								
	CPGT2152HP		●					●	●				●					●					●	●								
	CPGT32505HP		●					●	●				●				●	●			●		●	●								
	CPGT3251HP		●					●	●				●				●	●			●		●	●								
	CPGT3252HP		●					●	●				●					●					●	●								
CPGT-LF	CPGT2150LF		●					●	●				●				●	●			●		●	●								
	CPGT21505LF		●					●	●				●				●	●			●		●	●								
	CPGT2151LF		●					●	●				●				●	●			●		●	●								
	CPGT2152LF		●					●	●				●				●	●			●		●	●								
	CPGT32505LF		●					●	●				●				●	●			●		●	●								
	CPGT3251LF		●					●	●				●				●	●			●		●	●								
	CPGT3252LF		●					●	●				●				●	●			●		●	●								
CPMT-FW	CPMT21505FW	●	●				●	●				●	●										●									
	CPMT2151FW	●	●				●	●		●		●	●	●									●		●							
	CPMT2152FW	●	●				●	●		●		●	●	●									●		●							
	CPMT3251FW	●	●				●	●		●		●	●	●									●		●							
	CPMT3252FW	●	●				●	●		●		●	●	●									●		●							

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

CC../CD../CP..



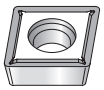
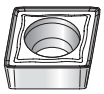
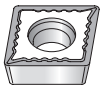
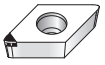
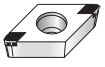
.C.. : 7°
.P.. : 11°
.D.. : 15°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CCMT2151UF	CCMT060204UF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	CCMT-UF
CCMT32505UF	CCMT09T302UF	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CCMT3251UF	CCMT09T304UF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CCMT3252UF	CCMT09T308UF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CDHB120601	CDHBS4T0S0	5/32	3,97	.159	4,03	.040	1,02	.002	0,1	.083	2,10	CDHB
CDHB120605	CDHBS4T002	5/32	3,97	.159	4,03	.040	1,02	.008	0,2	.083	2,10	
CDHB12061	CDHBS4T004	5/32	3,97	.159	4,03	.040	1,02	1/64	0,4	.083	2,10	
CDHH120605L	CDHHS4T002L	5/32	3,97	.159	4,03	.040	1,02	.008	0,2	.083	2,10	CDHH
CDHH120605R	CDHHS4T002R	5/32	3,97	.159	4,03	.040	1,02	.008	0,2	.083	2,10	
CDHH12061L	CDHHS4T004L	5/32	3,97	.159	4,03	.040	1,02	1/64	0,4	.083	2,10	
CDHH12061R	CDHHS4T004R	5/32	3,97	.159	4,03	.040	1,02	1/64	0,4	.083	2,10	
CPGM3250	CPGH09T301	3/8	9,53	.381	9,67	5/32	3,97	.004	0,1	.173	4,40	CPGM
CPGM32505	CPGH09T302	3/8	9,53	.381	9,67	5/32	3,97	.004	0,2	.173	4,40	
CPGM3251	CPGH09T304	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGM3252	CPGH09T308	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGT21505HP	CPGT060202HP	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPGT-HP
CPGT2151HP	CPGT060204HP	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGT2152HP	CPGT060208HP	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGT32505HP	CPGT09T302HP	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CPGT3251HP	CPGT09T304HP	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGT3252HP	CPGT09T308HP	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPGT2150LF	CPGT060201LF	1/4	6,35	.254	6,45	3/32	2,38	.004	0,1	.110	2,80	CPGT-LF
CPGT21505LF	CPGT060202LF	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPGT2151LF	CPGT060204LF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPGT2152LF	CPGT060208LF	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPGT32505LF	CPGT09T302LF	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CPGT3251LF	CPGT09T304LF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPGT3252LF	CPGT09T308LF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPMT21505FW	CPMT060202FW	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	CPMT-FW
CPMT2151FW	CPMT060204FW	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPMT2152FW	CPMT060208FW	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPMT3251FW	CPMT09T304FW	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPMT3252FW	CPMT09T308FW	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: CCMT2151UF
Insert grade: KC5010

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K					N					S						H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
CPMT-LF 	CPMT181505LF	●	●				●	●	●			●	●				●				●		●	●								
	CPMT18151LF	●	●				●	●	●			●	●				●				●		●	●								
	CPMT21505LF	●	●				●	●	●			●	●				●				●		●	●								
	CPMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	CPMT2152LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	CPMT32505LF	●	●				●	●	●			●	●				●				●		●	●								
	CPMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	
	CPMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
CPMT-MF	CPMT2152MF			●	●	●				●	●			●	●										●	●						●
	CPMT3252MF			●	●	●				●	●			●	●										●	●						●
	CPMT3253MF			●	●	●				●	●			●	●										●	●						
CPMT-MW 	CPMT3251MW	●	●			●	●	●		●		●	●	●									●		●							
	CPMT3252MW	●	●			●	●	●		●		●	●	●									●		●							
CPMT-UF 	CPMT2151UF		●	●	●			●					●										●								●	
	CPMT3251UF		●	●	●			●					●										●								●	
DCGW -F -S	DCMW3251F																			●												
	DCGW3251S0415															●											●						
	DCGW3252S0415															●											●						
DCGW-FWM 	DCGW2151EFWM																												●			
	DCGW2151S0415FWM																												●			
DCGW-FWMT 	DCGW3251EFWMT																												●			
	DCGW3251S0415FWMT																												●			
	DCGW3252EFWMT																												●			
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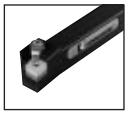
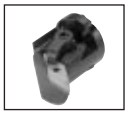

A185-A195

A216-A235

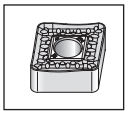

A244

A254-A259

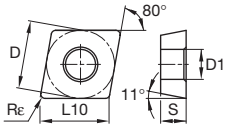
A6-A19

A26-A27

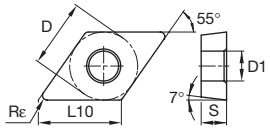
A28-A32


A33-A37

CP..



DC..

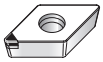
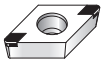
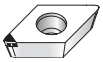
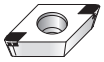
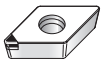
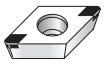


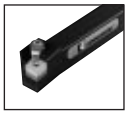
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
CPMT181505LF	CPMT050202LF	7/32	5,56	.222	5,65	3/32	2,38	.008	0,2	.104	2,65	CPMT-LF
CPMT18151LF	CPMT050204LF	7/32	5,56	.222	5,65	3/32	2,38	1/64	0,4	.104	2,65	
CPMT21505LF	CPMT060202LF	1/4	6,35	.254	6,45	3/32	2,38	.008	0,2	.110	2,80	
CPMT2151LF	CPMT060204LF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	
CPMT2152LF	CPMT060208LF	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	
CPMT32505LF	CPMT09T302LF	3/8	9,53	.381	9,67	5/32	3,97	.008	0,2	.173	4,40	
CPMT3251LF	CPMT09T304LF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
CPMT3252LF	CPMT09T308LF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPMT2152MF	CPMT060208MF	1/4	6,35	.254	6,45	3/32	2,38	1/32	0,8	.110	2,80	CPMT-MF
CPMT3252MF	CPMT09T308MF	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPMT3253MF	CPMT09T312MF	3/8	9,53	.381	9,67	5/32	3,97	3/64	1,2	.173	4,40	
CPMT3251MW	CPMT09T304MW	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	CPMT-MW
CPMT3252MW	CPMT09T308MW	3/8	9,53	.381	9,67	5/32	3,97	1/32	0,8	.173	4,40	
CPMT2151UF	CPMT060204UF	1/4	6,35	.254	6,45	3/32	2,38	1/64	0,4	.110	2,80	CPMT-UF
CPMT3251UF	CPMT09T304UF	3/8	9,53	.381	9,67	5/32	3,97	1/64	0,4	.173	4,40	
DCMW3251F	DCMW11T304F	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCGW -F -S
DCGW3251S0415	DCGW11T304S01015	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCGW3252S0415	DCGW11T308S01015	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCGW2151EFWM	DCGW070204EFWM	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	DCGW-FWM
DCGW2151S0415FWM	DCGW070204S01015FWM	1/4	6,35	.305	7,74	3/32	2,38	1/64	0,4	.110	2,80	
DCGW3251EFWMT	DCGW11T304EFWMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCGW-FWMT
DCGW3251S0415FWMT	DCGW11T304S01015FWMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCGW3252EFWMT	DCGW11T308EFWMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCGW3252S0415FWMT	DCGW11T308S01015FWMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: CPMT181505LF
Insert grade: KC5010

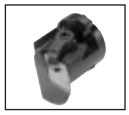
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
DCGW-M 	DCGW21505EM																											●	●		
	DCGW2151EM																											●			
	DCGW2151S0415M																											●	●		
	DCGW3251S0415M																												●		
	DCGW3252S0415M																												●		
DCGW-MT 	DCGW3251EMT																											●			
	DCGW3251S0415MT																											●			
	DCGW3252EMT																											●			
	DCGW3252S0415MT																											●			
DPGW	DPGW21505E																		●												
	DPMW21505F																			●											
	DPMW3251															●											●				
	DPGW3251E																		●												
	DPMW3251F																			●											
	DPGW3251F																			●											
	DPMW3252															●											●				
	DPGW3252E																		●												
	DPGW3252F																			●											
	DPMW3252F																			●											
DPGW-FWM 	DPGW2151EFWM																											●			
	DPGW2151S0415FWM																											●			
DPGW-FWMT 	DPGW3251EFWMT																											●			
	DPGW3251S0415FWMT																											●			
	DPGW3252EFWMT																											●			
	DPGW3252S0415FWMT																											●			
DPGW-M 	DPGW21505EM																											●	●		
	DPGW2151EM																											●			
	DPGW2151S0415M																											●	●		
	DPGW2152S0415M																												●		
	DPGW3251S0415M																												●		
	DPGW3252S0415M																												●		
DPGW-MT 	DPGW3251EMT																											●			
	DPGW3251S0415MT																											●			
	DPGW3252EMT																											●			
	DPGW3252S0415MT																											●			


A185-A195

A216-A235

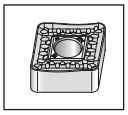

A244

A254-A259

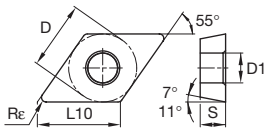
A6-A19

A26-A27

A28-A32


A33-A37

DC../DP..



.C.. : 7°
.P.. : 11°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DCGW21505EM	DCGW070202EM	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DCGW-M
DCGW2151EM	DCGW070204EM	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DCGW2151S0415M	DCGW070204S01015M	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DCGW3251S0415M	DCGW11T304S01015M	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCGW3252S0415M	DCGW11T308S01015M	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCGW3251EMT	DCGW11T304EMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCGW-MT
DCGW3251S0415MT	DCGW11T304S01015MT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCGW3252EMT	DCGW11T308EMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCGW3252S0415MT	DCGW11T308S01015MT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW21505E	DPGW070202E	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DPGW
DPMW21505F	DPMW070202F	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	
DPMW3251	DPMW11T304	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGW3251E	DPGW11T304E	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPMW3251F	DPMW11T304F	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGW3251F	DPGW11T304F	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPMW3252	DPMW11T308	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW3252E	DPGW11T308E	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW3252F	DPGW11T308F	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPMW3252F	DPMW11T308F	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW2151EFWM	DPGW070204EFWM	1/4	6,35	.305	7,74	3/32	2,38	1/64	0,4	.110	2,80	DPGW-FWM
DPGW2151S0415FWM	DPGW070204S01015FWM	1/4	6,35	.305	7,74	3/32	2,38	1/64	0,4	.110	2,80	
DPGW3251EFWMT	DPGW11T304EFWMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DPGW-FWMT
DPGW3251S0415FWMT	DPGW11T304S01015FWMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGW3252EFWMT	DPGW11T308EFWMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW3252S0415FWMT	DPGW11T308S01015FWMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW21505EM	DPGW070202EM	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DPGW-M
DPGW2151EM	DPGW070204EM	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DPGW2151S0415M	DPGW070204S01015M	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DPGW2152S0415M	DPGW070208S01015M	1/4	6,35	.305	7,75	3/32	2,38	1/32	0,8	.110	2,80	
DPGW3251S0415M	DPGW11T304S01015M	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGW3252S0415M	DPGW11T308S01015M	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW3251EMT	DPGW11T304EMT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DPGW-MT
DPGW3251S0415MT	DPGW11T304S01015MT	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGW3252EMT	DPGW11T308EMT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGW3252S0415MT	DPGW11T308S01015MT	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: DCGW21505EM
Insert grade: KB9610

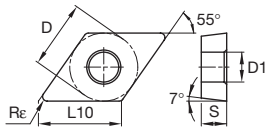
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
DCGT-HP	DCGT21505HP		●					●	●				●				●	●			●		●	●							
	DCGT2151HP		●					●	●				●				●	●			●		●	●							
	DCGT2152HP		●					●	●				●				●	●			●		●	●							
	DCGT32505HP		●					●	●				●				●	●			●		●	●							
	DCGT3251HP		●					●	●				●				●	●			●		●	●							
	DCGT3252HP		●					●	●				●				●	●			●		●	●							
DCGT-LF	DCGT215X0LF								●															●							
	DCGT2150LF		●					●	●				●										●	●							
	DCGT325X0LF								●															●							
	DCGT3250LF		●					●	●				●										●	●							
	DCGT432LF		●					●	●				●										●	●							
DCMT-11	DCMT2150511	●					●					●																			
	DCMT215111	●					●					●																			
	DCMT325111	●					●					●																			
	DCMT325211	●					●					●																			
DCMT-FW	DCMT3251FW	●	●	●			●	●		●		●	●	●									●		●						
	DCMT3252FW	●	●	●			●	●		●		●	●	●									●		●						
DCMT-LF	DCMT21505LF	●	●				●	●	●			●	●				●				●		●	●							
	DCMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	DCMT32505LF	●	●				●	●	●			●	●				●				●		●	●							
	DCMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●	●	●	●	●	●					●	●
	DCMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	DCMT3253LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	DCMT431LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						
	DCMT432LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
DCMT-MF	DCMT3251MF			●	●	●				●	●			●	●										●	●						●
	DCMT3252MF			●	●	●				●	●			●	●		●				●				●	●						●
	DCMT3253MF			●	●	●				●	●			●	●										●	●						●
DCMT-MW	DCMT3251MW	●	●	●			●	●		●		●	●	●									●		●						
	DCMT3252MW	●	●	●			●	●		●		●	●	●									●		●						
DCMT-UF	DCMT2151UF		●	●	●			●					●										●								●	
	DCMT32505UF		●	●	●			●					●										●								●	
	DCMT3251UF		●	●	●			●					●										●								●	
	DCMT3252UF		●	●	●			●					●										●								●	

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

DC..



ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DCGT21505HP	DCGT070202HP	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DCGT-HP
DCGT2151HP	DCGT070204HP	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DCGT2152HP	DCGT070208HP	1/4	6,35	.305	7,75	3/32	2,38	1/32	0,8	.110	2,80	
DCGT32505HP	DCGT11T302HP	3/8	9,53	.458	11,63	5/32	3,97	.008	0,2	.173	4,40	
DCGT3251HP	DCGT11T304HP	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCGT3252HP	DCGT11T308HP	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCGT215X0LF	DCGT0702X0LF	1/4	6,35	.305	7,75	3/32	2,38	.0015	0,04	.110	2,80	DCGT-LF
DCGT2150LF	DCGT070201LF	1/4	6,35	.305	7,75	3/32	2,38	.004	0,1	.110	2,80	
DCGT325X0LF	DCGT11T3X0LF	3/8	9,53	.458	11,63	5/32	3,97	.0015	0,04	.173	4,40	
DCGT3250LF	DCGT11T301LF	3/8	9,53	.458	11,63	5/32	3,97	.004	0,1	.173	4,40	
DCGT432LF	DCGT150408LF	1/2	12,70	.610	15,50	3/16	4,76	1/32	0,8	.217	5,50	
DCMT2150511	DCMT07020211	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DCMT-11
DCMT215111	DCMT07020411	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DCMT325111	DCMT11T30411	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCMT325211	DCMT11T30811	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCMT3251FW	DCMT11T304FW	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCMT-FW
DCMT3252FW	DCMT11T308FW	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCMT21505LF	DCMT070202LF	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DCMT-LF
DCMT2151LF	DCMT070204LF	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DCMT32505LF	DCMT11T302LF	3/8	9,53	.458	11,63	5/32	3,97	.008	0,2	.173	4,40	
DCMT3251LF	DCMT11T304LF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCMT3252LF	DCMT11T308LF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCMT3253LF	DCMT11T312LF	3/8	9,53	.458	11,63	5/32	3,97	3/64	1,2	.173	4,40	
DCMT431LF	DCMT150404LF	1/2	12,70	.610	15,50	3/16	4,76	1/64	0,4	.217	5,50	
DCMT432LF	DCMT150408LF	1/2	12,70	.610	15,50	3/16	4,76	1/32	0,8	.217	5,50	
DCMT3251MF	DCMT11T304MF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCMT-MF
DCMT3252MF	DCMT11T308MF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCMT3253MF	DCMT11T312MF	3/8	9,53	.458	11,63	5/32	3,97	3/64	1,2	.173	4,40	
DCMT3251MW	DCMT11T304MW	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	DCMT-MW
DCMT3252MW	DCMT11T308MW	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DCMT2151UF	DCMT070204UF	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	DCMT-UF
DCMT32505UF	DCMT11T302UF	3/8	9,53	.458	11,63	5/32	3,97	.008	0,2	.173	4,40	
DCMT3251UF	DCMT11T304UF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DCMT3252UF	DCMT11T308UF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: DCGT21505HP
Insert grade: KC5010

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K					N					S						H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
DPGT-HP	DPGT21505HP		●					●	●				●				●	●			●		●	●								
	DPGT2151HP		●					●	●				●				●	●			●		●	●								
	DPGT2152HP		●					●	●				●				●	●			●		●	●								
	DPGT3251HP		●					●	●				●				●	●			●		●	●								
	DPGT3252HP		●					●	●				●				●	●			●		●	●								
DPGT-LF	DPGT2150LF	●	●				●	●	●			●	●					●					●	●								
	DPGT21505LF	●	●				●	●	●			●	●					●					●	●								
	DPGT2151LF	●	●				●	●	●			●	●					●					●	●								
	DPGT3250LF	●	●				●	●	●			●	●					●					●	●								
	DPGT32505LF	●	●				●	●	●			●	●					●					●	●								
	DPGT3251LF	●	●				●	●	●			●	●					●					●	●								
	DPGT3252LF	●	●				●	●	●			●	●					●					●	●								
DPMT-FW	DPMT2151FW	●	●	●			●	●		●		●	●	●									●		●							
	DPMT2152FW	●	●	●			●	●		●		●	●	●									●		●							
	DPMT3251FW	●	●	●			●	●		●		●	●	●									●		●							
	DPMT3252FW	●	●	●			●	●		●		●	●	●									●		●							
DPMT-LF	DPMT21505LF	●	●				●	●	●			●	●										●	●								
	DPMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						
	DPMT32505LF	●	●				●	●	●			●	●										●	●								
	DPMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	
	DPMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
DPMT-MF	DPMT3252MF			●	●	●				●	●			●	●										●	●						●
DPMT-UF	DPMT2151UF		●	●	●			●					●										●								●	
	DPMT3251UF		●	●	●			●					●										●								●	
	DPMT3252UF		●	●	●			●					●										●								●	
FFEW	FFEW533L																			●												
	FFEW533R																			●												

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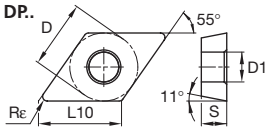
DP..



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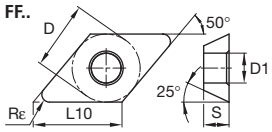


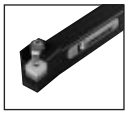
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
DPGT21505HP	DPGT070202HP	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DPGT-HP
DPGT2151HP	DPGT070204HP	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DPGT2152HP	DPGT070208HP	1/4	6,35	.305	7,75	3/32	2,38	1/32	0,8	.110	2,80	
DPGT3251HP	DPGT11T304HP	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGT3252HP	DPGT11T308HP	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPGT2150LF	DPGT070201LF	1/4	6,35	.305	7,75	3/32	2,38	.004	0,1	.110	2,80	DPGT-LF
DPGT21505LF	DPGT070202LF	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	
DPGT2151LF	DPGT070204LF	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DPGT3250LF	DPGT11T301LF	3/8	9,53	.458	11,63	5/32	3,97	.004	0,1	.173	4,40	
DPGT32505LF	DPGT11T302LF	3/8	9,53	.458	11,63	5/32	3,97	.008	0,2	.173	4,40	
DPGT3251LF	DPGT11T304LF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPGT3252LF	DPGT11T308LF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPMT2151FW	DPMT070204FW	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	DPMT-FW
DPMT2152FW	DPMT070208FW	1/4	6,35	.305	7,75	3/32	2,38	1/32	0,8	.110	2,80	
DPMT3251FW	DPMT11T304FW	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPMT3252FW	DPMT11T308FW	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPMT21505LF	DPMT070202LF	1/4	6,35	.305	7,75	3/32	2,38	.008	0,2	.110	2,80	DPMT-LF
DPMT2151LF	DPMT070204LF	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	
DPMT32505LF	DPMT11T302LF	3/8	9,53	.458	11,63	5/32	3,97	.008	0,2	.173	4,40	
DPMT3251LF	DPMT11T304LF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPMT3252LF	DPMT11T308LF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
DPMT3252MF	DPMT11T308MF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	DPMT-MF
DPMT2151UF	DPMT070204UF	1/4	6,35	.305	7,75	3/32	2,38	1/64	0,4	.110	2,80	DPMT-UF
DPMT3251UF	DPMT11T304UF	3/8	9,53	.458	11,63	5/32	3,97	1/64	0,4	.173	4,40	
DPMT3252UF	DPMT11T308UF	3/8	9,53	.458	11,63	5/32	3,97	1/32	0,8	.173	4,40	
FFEW533L	FFEW533L	5/8	15,88	.816	20,72	3/16	4,76	3/64	1,2	.217	5,51	FFEW
FFEW533R	FFEW533R	5/8	15,88	.816	20,72	3/16	4,76	3/64	1,2	.217	5,51	

Order example:
ANSI catalog number: DPGT21505HP
Insert grade: KC5010

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
FFEW	FFEW210430L																	●													
	FFEW210430R																	●													
	FFEW533L																	●													
	FFEW533R																	●													
RCGT-HP	RCGT0803M0HP		●					●	●				●				●	●			●		●	●							
	RCGT10T3M0HP		●					●	●				●				●	●			●		●	●							
	RCGT1204M0HP		●					●	●				●				●	●			●		●	●							
RCGT-MS	RCGT0803M0MS							●					●										●	●							
	RCGX1003M0MS							●					●										●	●							
	RCGT1204M0MS							●					●										●	●							
	RCGT1606M0MS							●					●										●	●							
RCGW-T	RCGW1204M0T01020																											●			
	RCGW1606M0T20015																											●			
	RCGW2006M0T20015																											●			
	RCGW2507M0T20015																											●			
RCMT	RCMT0602M0		●			●		●			●		●	●			●				●		●			●					
	RCMT215		●			●		●			●		●	●				●			●		●			●					
	RCMT0803M0		●			●		●			●		●	●			●				●		●			●					
	RCMT10T3M0		●			●		●			●		●	●			●				●		●			●					
	RCMT325		●			●		●			●		●	●			●	●			●		●			●					
	RCMT1204M0		●			●		●			●		●	●			●				●		●			●					
	RCMT1605M0		●			●		●			●		●	●			●				●		●			●					
	RCMT2006M0		●			●		●			●		●	●			●				●		●			●					
RCMT-RH	RCMT2006M0RH			●	●						●															●					
	RCMX2507M0RH			●	●						●															●					
	RCMX3209M0RH			●	●						●															●					
RCMT-RM	RCMT2006M0RM			●	●						●															●					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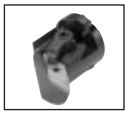
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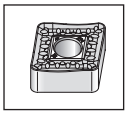
A6-A19

A26-A27

A28-A32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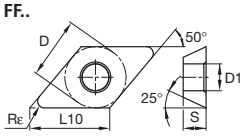

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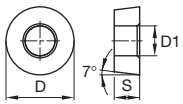
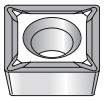
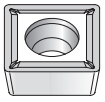
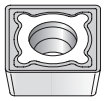
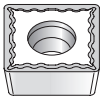
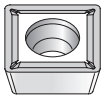


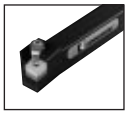
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
FFEW210430L	FFEW210430L	5/8	15,88	.816	20,72	3/16	4,76	.118	3,0	.217	5,51	FFEW
FFEW210430R	FFEW210430R	5/8	15,88	.816	20,72	3/16	4,76	.118	3,0	.217	5,51	
FFEW533L	FFEW533L	5/8	15,88	.816	20,72	3/16	4,76	3/64	1,2	.217	5,51	
FFEW533R	FFEW533R	5/8	15,88	.816	20,72	3/16	4,76	3/64	1,2	.217	5,51	
RCGT0803M0HP	RCGT0803M0HP	.315	8,00	-	-	1/8	3,18	-	-	.134	3,40	RCGT-HP
RCGT10T3M0HP	RCGT10T3M0HP	.394	10,00	-	-	5/32	3,97	-	-	.173	4,40	
RCGT1204M0HP	RCGT1204M0HP	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	
RCGT0803M0MS	RCGT0803M0MS	.315	8,00	-	-	1/8	3,18	-	-	.134	3,40	RCGT-MS
RCGX1003M0MS	RCGX1003M0MS	.394	10,00	-	-	5/32	3,97	-	-	.134	3,40	
RCGT1204M0MS	RCGT1204M0MS	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	
RCGT1606M0MS	RCGT1606M0MS	.630	16,00	-	-	1/4	6,35	-	-	.217	5,50	
RCGW1204M0T01020	RCGW1204M0T01020	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	RCGW-T
RCGW1606M0T20015	RCGW1606M0T20015	.630	16,00	-	-	1/4	6,35	-	-	.217	5,50	
RCGW2006M0T20015	RCGW2006M0T20015	.787	20,00	-	-	1/4	6,35	-	-	.256	6,50	
RCGW2507M0T20015	RCGW2507M0T20015	.984	25,00	-	-	5/16	7,94	-	-	.291	7,40	
RCMT0602M0	RCMT0602M0	.236	6,00	-	-	3/32	2,38	-	-	.110	2,80	RCMT
RCMT215	RCMT060200	1/4	6,35	-	-	3/32	2,38	-	-	.110	2,80	
RCMT0803M0	RCMT0803M0	.315	8,00	-	-	1/8	3,18	-	-	.134	3,40	
RCMT10T3M0	RCMT10T3M0	.394	10,00	-	-	5/32	3,97	-	-	.173	4,40	
RCMT325	RCMT09T300	3/8	9,53	-	-	5/32	3,97	-	-	.173	4,40	
RCMT1204M0	RCMT1204M0	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	
RCMT1605M0	RCMT1605M0	.630	16,00	-	-	7/32	5,56	-	-	.217	5,50	
RCMT2006M0	RCMT2006M0	.787	20,00	-	-	1/4	6,35	-	-	.256	6,50	
RCMT2006M0RH	RCMT2006M0RH	.787	20,00	-	-	1/4	6,35	-	-	.256	6,50	RCMT-RH
RCMX2507M0RH	RCMX2507M0RH	.984	25,00	-	-	5/16	7,94	-	-	.291	7,40	
RCMX3209M0RH	RCMX3209M0RH	1.259	32,00	-	-	3/8	9,53	-	-	.374	9,50	
RCMT2006M0RM	RCMT2006M0RM	.787	20,00	-	-	1/4	6,35	-	-	.256	6,50	RCMT-RM

Order example:
ANSI catalog number: FFEW210430L
Insert grade: KC5410

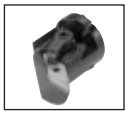
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
RCMT-RP	RCGT0602M0RP			●	●	●								●																	
	RCGT0803M0RP			●	●	●								●																	
	RCGX1003M0RP			●	●	●								●																	
	RCMX1003M0RP			●	●	●								●																	
	RCGT1204M0RP			●	●	●								●																	
	RCMT1204M0RP			●	●	●								●																	
	RCMT1606M0RP			●	●	●								●																	
	RCMT2006M0RP			●	●						●															●					
	RCMX2507M0RP			●	●						●															●					
	RCMX3209M0RP			●	●						●															●					
SCGW-S	SCGW432S0415															●											●				
	SCGW433S0415															●											●				
SCMT-11 	SCMT325111	●					●					●																			
	SCMT325211	●					●					●																			
	SCMT43111	●					●					●																			
	SCMT43211	●					●					●																			
SCMT-LF 	SCMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●					●	
	SCMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●					●	●
	SCMT431LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●					●	
	SCMT432LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●					●	●
	SCMT433LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●						●
SCMT-MF 	SCMT3252MF			●	●	●				●	●			●	●									●	●						●
	SCMT432MF			●	●	●				●	●			●	●									●	●						●
	SCMT433MF			●	●	●				●	●			●	●									●	●						●
SCMT-UF 	SCMT3252UF		●	●	●			●					●										●							●	
SPGH 	SPGH25152																	●													
	SPGH322																	●													


A185-A195

A216-A235

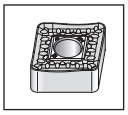

A244

A254-A259

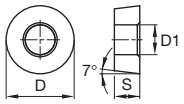
A6-A19

A26-A27

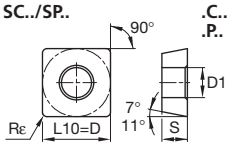
A28-A32


A33-A37

RC..



SC../SP..



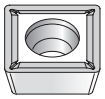
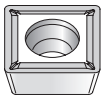
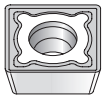
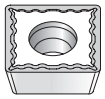
.C.. : 7°
.P.. : 11°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
RCGT0602M0RP	RCGT0602M0RP	.236	6,00	-	-	3/32	2,38	-	-	.110	2,80	RCMT-RP
RCGT0803M0RP	RCGT0803M0RP	.315	8,00	-	-	1/8	3,18	-	-	.134	3,40	
RCGX1003M0RP	RCGX1003M0RP	.394	10,00	-	-	5/32	3,97	-	-			
RCMX1003M0RP	RCMX1003M0RP	.394	10,00	-	-	5/32	3,97	-	-			
RCGT1204M0RP	RCGT1204M0RP	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	
RCMT1204M0RP	RCMT1204M0RP	.472	12,00	-	-	3/16	4,76	-	-	.173	4,40	
RCMT1606M0RP	RCMT1606M0RP	.630	16,00	-	-	1/4	6,35	-	-	.217	5,50	
RCMT2006M0RP	RCMT2006M0RP	.787	20,00	-	-	1/4	6,35	-	-	.256	6,50	
RCMX2507M0RP	RCMX2507M0RP	.984	25,00	-	-	5/16	7,94	-	-	.291	7,40	
RCMX3209M0RP	RCMX3209M0RP	1.259	32,00	-	-	3/8	9,53	-	-	.374	9,50	
SCGW432S0415	SCGW120408S01015	1/2	12,70	.500	12,70	3/16	4,76	1/32	0,8	.217	5,50	SCGW-S
SCGW433S0415	SCGW120412S01015	1/2	12,70	.500	12,70	3/16	4,76	3/64	1,2	.217	5,50	
SCMT325111	SCMT09T30411	3/8	9,53	.375	9,53	5/32	3,97	1/64	0,4	.173	4,40	SCMT-11
SCMT325211	SCMT09T30811	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	
SCMT43111	SCMT12040411	1/2	12,70	.500	12,70	3/16	4,76	1/64	0,4	.217	5,50	
SCMT43211	SCMT12040811	1/2	12,70	.500	12,70	3/16	4,76	1/32	0,8	.217	5,50	
SCMT3251LF	SCMT09T304LF	3/8	9,53	.375	9,53	5/32	3,97	1/64	0,4	.173	4,40	SCMT-LF
SCMT3252LF	SCMT09T308LF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	
SCMT431LF	SCMT120404LF	1/2	12,70	.500	12,70	3/16	4,76	1/64	0,4	.217	5,50	
SCMT432LF	SCMT120408LF	1/2	12,70	.500	12,70	3/16	4,76	1/32	0,8	.217	5,50	
SCMT433LF	SCMT120412LF	1/2	12,70	.500	12,70	3/16	4,76	3/64	1,2	.217	5,50	
SCMT3252MF	SCMT09T308MF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	SCMT-MF
SCMT432MF	SCMT120408MF	1/2	12,70	.500	12,70	3/16	4,76	1/32	0,8	.217	5,50	
SCMT433MF	SCMT120412MF	1/2	12,70	.500	12,70	3/16	4,76	3/64	1,2	.217	5,50	
SCMT3252UF	SCMT09T308UF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	SCMT-UF
SPGH25152	SPGH070208	5/16	7,94	.276	7,00	3/32	2,38	1/32	0,8	.128	3,24	SPGH
SPGH322	SPGH090308	3/8	9,53	.375	9,53	1/8	3,18	1/32	0,8	.156	3,95	

Order example:
ANSI catalog number: RCGT0602M0RP
Insert grade: KC9110

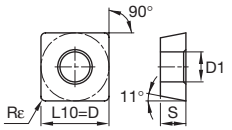
SCREW-ON Inserts

Grade Selection

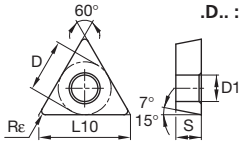
	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
SPGT-LF 	SPGT3251LF		●					●	●				●					●					●	●								
	SPGT3252LF		●					●	●				●					●					●	●								●
SPMT-LF 	SPMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					
	SPMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●
SPMT-MF 	SPMT3252MF			●	●	●				●	●			●	●										●	●					●
	SPMT432MF			●	●	●				●	●			●	●										●	●					●
SPMT-UF 	SPMT3251UF		●	●	●			●					●										●							●	
TCGW -F -S	TCMW2151F																			●											
	TCGW3251S0415															●											●				
	TCGW3252S0415															●											●				
TCGW-M	TCGW21505EM																											●	●		
	TCGW2151S0415M																											●	●		
	TCGW2152S0415M																											●			
	TCGW3251S0415M																												●		
	TCGW3252S0415M																												●		
TCGW-MT	TCGW3251S0415MT																											●			
	TCGW3252S0415MT																											●			
TDHB	TDHB12807501																			●									●		
	TDHB12807505																			●									●		
	TDHB1280751																			●									●		
	TDHB1280752																			●									●		

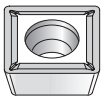
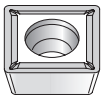
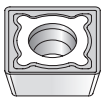
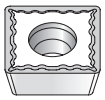
A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

SP..



TC../TD.. **.C.. : 7°** **.D.. : 15°**

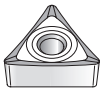
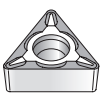


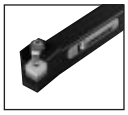
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
SPGT3251LF	SPGT09T304LF	3/8	9,53	.375	9,53	5/32	3,97	1/64	0,4	.173	4,40	SPGT-LF
SPGT3252LF	SPGT09T308LF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	
SPMT3251LF	SPMT09T304LF	3/8	9,53	.375	9,53	5/32	3,97	1/64	0,4	.173	4,40	SPMT-LF
SPMT3252LF	SPMT09T308LF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	
SPMT3252MF	SPMT09T308MF	3/8	9,53	.375	9,53	5/32	3,97	1/32	0,8	.173	4,40	SPMT-MF
SPMT432MF	SPMT120408MF	1/2	12,70	.500	12,70	3/16	4,76	1/32	0,8	.217	5,50	
SPMT3251UF	SPMT09T304UF	3/8	9,53	.375	9,53	5/32	3,97	1/64	0,4	.173	4,40	SPMT-UF
												
TCMW2151F	TCMW110204F	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	TCGW -F -S
TCGW3251S0415	TCGW16T304S01015	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCGW3252S0415	TCGW16T308S01015	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCGW21505EM	TCGW110202EM	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TCGW-M
TCGW2151S0415M	TCGW110204S01015M	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TCGW2152S0415M	TCGW110208S01015M	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TCGW3251S0415M	TCGW16T304S01015M	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCGW3252S0415M	TCGW16T308S01015M	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCGW3251S0415MT	TCGW16T304S01015MT	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	TCGW-MT
TCGW3252S0415MT	TCGW16T308S01015MT	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TDHB12807501	TDHB07T12S0	.160	4,06	.277	7,04	3/64	1,19	.002	0,05	.094	2,39	TDHB
TDHB12807505	TDHB07T1202	.160	4,06	.277	7,04	3/64	1,19	.007	0,2	.094	2,39	
TDHB1280751	TDHB07T1204	.160	4,06	.277	7,04	3/64	1,19	1/64	0,4	.094	2,39	
TDHB1280752	TDHB07T1208	.160	4,06	.277	7,04	3/64	1,19	1/32	0,8	.094	2,39	

Order example:
ANSI catalog number: SPGT3251LF
Insert grade: KC5010

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
TPGM-F	TPGM21505F																			●											
	TPGM2151F																			●											
	TPGM2152F																			●											
TPGW	TPGW21505E																		●												
	TPGW21505F																			●											
	TPGW2151															●											●				
	TPGW2151E																		●												
	TPGW2151F																			●											
	TPGW2152															●											●				
	TPGW2152E																		●												
	TPGW2152F																			●											
TPGW-M	TPGW21505EM																												●	●	
	TPGW2151S0415M																												●	●	
	TPGW2152S0415M																												●	●	
	TPGW3251S0415M																													●	
	TPGW3252S0415M																													●	
TPGW-MT	TPGW3251S0415MT																												●		
	TPGW3252S0415MT																												●		
TCGT-HP 	TCGT21505HP		●					●	●				●					●					●	●							
	TCGT2151HP		●					●	●				●				●	●			●		●	●							
	TCGT2152HP		●					●	●				●					●					●	●							
	TCGT32505HP		●					●	●				●										●	●							
	TCGT3251HP		●					●	●				●				●	●			●		●	●							
	TCGT3252HP		●					●	●				●				●	●			●		●	●							
TCGT-LF	TCGT215X0LF								●															●							
	TCGT2150LF		●					●	●				●										●	●							
	TCGT2151LF		●					●	●				●										●	●							
	TCGT325X0LF								●															●							
	TCGT3250LF		●					●	●				●										●	●							
	TCGT32505LF		●					●					●										●								
	TCGT3251LF		●					●	●				●					●					●	●							
	TCGT3252LF		●					●					●										●								
TCMT-11 	TCMT215111	●					●					●																			
	TCMT325111	●					●					●																			
	TCMT325211	●					●					●																			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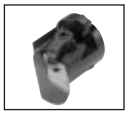
A216-A235

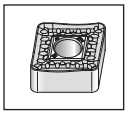

A244

A254-A259

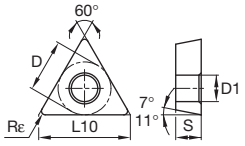
A6-A19

A26-A27

A28-A32


A33-A37

TC../TP..



.C.. : 7°
.P.. : 11°

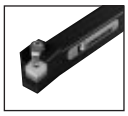
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TPGM21505F	TPGT110202F	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TPGM-F
TPGM2151F	TPGT110204F	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGM2152F	TPGT110208F	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGW21505E	TPGW110202E	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TPGW
TPGW21505F	TPGW110202F	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	
TPGW2151	TPGW110204	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGW2151E	TPGW110204E	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGW2151F	TPGW110204F	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGW2152	TPGW110208	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGW2152E	TPGW110208E	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGW2152F	TPGW110208F	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGW21505EM	TPGW110202EM	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TPGW-M
TPGW2151S0415M	TPGW110204S01015M	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGW2152S0415M	TPGW110208S01015M	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGW3251S0415M	TPGW16T304S01015M	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TPGW3252S0415M	TPGW16T308S01015M	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TPGW3251S0415MT	TPGW16T304S01015MT	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	TPGW-MT
TPGW3252S0415MT	TPGW16T308S01015MT	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCGT21505HP	TCGT110202HP	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TCGT-HP
TCGT2151HP	TCGT110204HP	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TCGT2152HP	TCGT110208HP	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TCGT32505HP	TCGT16T302HP	3/8	9,53	.650	16,50	5/32	3,97	.008	0,2	.173	4,40	
TCGT3251HP	TCGT16T304HP	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCGT3252HP	TCGT16T308HP	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCGT215X0LF	TCGT1102X0LF	1/4	6,35	.433	11,00	3/32	2,38	.0015	0,04	.110	2,80	TCGT-LF
TCGT2150LF	TCGT110201LF	1/4	6,35	.433	11,00	3/32	2,38	.004	0,1	.110	2,80	
TCGT2151LF	TCGT110204LF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TCGT325X0LF	TCGT16T3X0LF	3/8	9,53	.650	16,50	5/32	3,97	.0015	0,04	.173	4,40	
TCGT3250LF	TCGT16T301LF	3/8	9,53	.650	16,50	5/32	3,97	.004	0,1	.173	4,40	
TCGT32505LF	TCGT16T302LF	3/8	9,53	.650	16,50	5/32	3,97	.008	0,2	.173	4,40	
TCGT3251LF	TCGT16T304LF	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCGT3252LF	TCGT16T308LF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCMT215111	TCMT11020411	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	TCMT-11
TCMT325111	TCMT16T30411	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCMT325211	TCMT16T30811	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: TPGM21505F
Insert grade: KD100

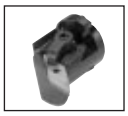
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P					M					K					N					S						H			KENNA UNIVERSAL	
		KT315	KC5010	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC9240	KT315	KC5010	KC9315	KC9325	KD120	K313	KC5410	KD1405	KD100	K313	K68	KC5010	KC5025	KC9225	KC9240	KD120	KY1615	KB9610	KB5625	KU10T	KU30T
TCMT-LF	TCMT21505LF	●	●				●	●	●			●	●										●	●								
	TCMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	TCMT2152LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	TCMT32505LF	●	●				●	●	●			●	●										●	●								
	TCMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	TCMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●								●	●	●	●	●					●	●
	TCMT3253LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						●
	TCMT432LF		●	●	●	●		●	●	●	●		●	●									●	●	●	●						
TCMT-MF	TCMT2152MF			●	●	●				●	●			●	●										●	●						●
	TCMT3252MF			●	●	●				●	●			●	●										●	●						●
	TCMT3253MF			●	●	●				●	●			●	●										●	●						●
TCMT-UF	TCMT2151UF		●	●	●			●					●										●								●	
	TCMT2152UF		●	●	●			●					●										●								●	
	TCMT3252UF		●	●	●			●					●										●								●	
TDHB	TDHB12807501	●	●				●	●	●			●	●										●	●								
	TDHB12807505	●	●				●	●	●			●	●										●	●								
	TDHB1280751	●	●				●	●	●			●	●										●	●								
	TDHB1280752	●	●				●	●	●			●	●										●	●								
TDHH	TDHH12807505L	●	●				●	●	●			●	●										●	●								
	TDHH12807505R	●	●				●	●	●			●	●										●	●								
	TDHH1280751L	●	●				●	●	●			●	●										●	●								
	TDHH1280751R	●	●				●	●	●			●	●										●	●								
	TDHH1280752L	●	●				●	●	●			●	●										●	●								
	TDHH1280752R	●	●				●	●	●			●	●										●	●								
TPGM	TPGM3251		●	●	●	●		●	●	●	●		●	●									●	●	●	●						
	TPGM3252		●	●	●	●		●	●	●	●		●	●									●	●	●	●						
TPGT-HP	TPGT21505HP		●					●	●				●				●	●			●		●	●								
	TPGT2151HP		●					●	●				●				●	●			●		●	●								
	TPGT2152HP		●					●	●				●				●	●			●		●	●								
	TPGT32505HP		●					●	●				●					●					●	●								
	TPGT3251HP		●					●	●				●					●			●		●	●								
	TPGT3252HP		●					●	●				●					●					●	●								


A185-A195

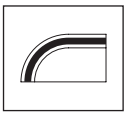
A216-A235

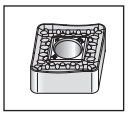

A244

A254-A259

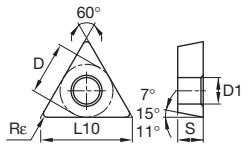
A6-A19

A26-A27


A28-A32


A33-A37

TC../TD../TP..



.C.. : 7°
.P. : 11°
.D.. : 15°

ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TCMT21505LF	TCMT110202LF	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TCMT-LF
TCMT2151LF	TCMT110204LF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TCMT2152LF	TCMT110208LF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TCMT32505LF	TCMT16T302LF	3/8	9,53	.650	16,50	5/32	3,97	.008	0,2	.173	4,40	
TCMT3251LF	TCMT16T304LF	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TCMT3252LF	TCMT16T308LF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCMT3253LF	TCMT16T312LF	3/8	9,53	.650	16,50	5/32	3,97	3/64	1,2	.173	4,40	
TCMT432LF	TCMT220408LF	1/2	12,70	.866	22,00	3/16	4,76	1/32	0,8	.217	5,50	
TCMT2152MF	TCMT110208MF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	TCMT-MF
TCMT3252MF	TCMT16T308MF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TCMT3253MF	TCMT16T312MF	3/8	9,53	.650	16,50	5/32	3,97	3/64	1,2	.173	4,40	
TCMT2151UF	TCMT110204UF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	TCMT-UF
TCMT2152UF	TCMT110208UF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TCMT3252UF	TCMT16T308UF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TDHB12807501	TDHB07T12S0	.160	4,06	.277	7,04	3/64	1,19	.002	0,05	.094	2,39	TDHB
TDHB12807505	TDHB07T1202	.160	4,06	.277	7,04	3/64	1,19	.007	0,2	.094	2,39	
TDHB1280751	TDHB07T1204	.160	4,06	.277	7,04	3/64	1,19	1/64	0,4	.094	2,39	
TDHB1280752	TDHB07T1208	.160	4,06	.277	7,04	3/64	1,19	1/32	0,8	.094	2,39	
TDHH12807505L	TDHH07T1202L	.160	4,06	.277	7,04	3/64	1,19	.007	0,2	.094	2,39	TDHH
TDHH12807505R	TDHH07T1202R	.160	4,06	.277	7,04	3/64	1,19	.007	0,2	.094	2,39	
TDHH1280751L	TDHH07T1204L	.160	4,06	.277	7,04	3/64	1,19	1/64	0,4	.094	2,39	
TDHH1280751R	TDHH07T1204R	.160	4,06	.277	7,04	3/64	1,19	1/64	0,4	.094	2,39	
TDHH1280752L	TDHH07T1208L	.160	4,06	.277	7,04	3/64	1,19	1/32	0,8	.094	2,39	
TDHH1280752R	TDHH07T1208R	.160	4,06	.277	7,04	3/64	1,19	1/32	0,8	.094	2,39	
TPGM3251	TPGH16T304	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	TPGM
TPGM3252	TPGH16T308	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TPGT21505HP	TPGT110202HP	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TPGT-HP
TPGT2151HP	TPGT110204HP	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGT2152HP	TPGT110208HP	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGT32505HP	TPGT16T302HP	3/8	9,53	.650	16,50	5/32	3,97	.008	0,2	.173	4,40	
TPGT3251HP	TPGT16T304HP	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TPGT3252HP	TPGT16T308HP	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: TCMT21505LF
Insert grade: KT315

SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
TPGT-LF	TPGT181505LF		●					●	●				●					●					●	●								
	TPGT18151LF		●					●	●				●					●					●	●								
	TPGT2150LF		●					●	●				●					●					●	●								
	TPGT21505LF		●					●	●				●					●					●	●								
	TPGT2151LF		●					●	●				●					●					●	●								
	TPGT2152LF		●					●	●				●					●					●	●								
	TPGT3251LF		●					●	●				●					●					●	●								
	TPGT3252LF		●					●	●				●					●					●	●								
TPMT-LF	TPMT181505LF	●	●				●	●	●			●	●										●	●								
	TPMT18151LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●						
	TPMT21505LF	●	●				●	●	●			●	●										●	●								
	TPMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	TPMT2152LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	●
	TPMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						●
	TPMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●					●	
	TPMT3253LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						
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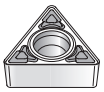
TPMT-MF 	TPMT2152MF			●	●	●				●	●			●	●										●	●						
	TPMT3252MF			●	●	●				●	●			●	●										●	●						●
	TPMT3253MF			●	●	●				●	●			●	●										●	●						
TPMT-UF	TPMT21505UF		●	●	●			●					●										●								
	TPMT2151UF		●	●	●			●					●										●							●	
	TPMT3251UF		●	●	●			●					●										●								
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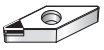
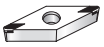
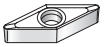
VBGW -E -F 	VBGW331E																		●												
	VBGW331F																			●											
	VBGW332E																		●												
VBGW-MT 	VBGW331S0415MT																											●			
	VBGW332S0415MT																											●			
VBGT-HP 	VBGT2205HP		●					●	●				●					●					●	●								
	VBGT221HP		●					●	●				●					●					●	●								
	VBGT331HP		●					●	●				●				●	●			●		●	●								
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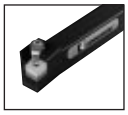
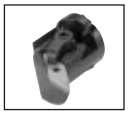

A185-A195

A216-A235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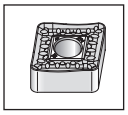
A254-A259

A6-A19

A26-A27

A28-A32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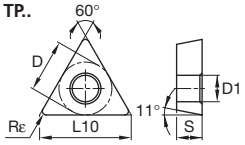

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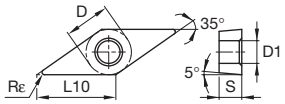
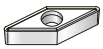
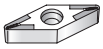
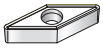
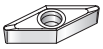
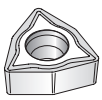


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
TPGT181505LF	TPGT090202LF	7/32	5,56	.379	9,63	3/32	2,38	.008	0,2	.104	2,65	TPGT-LF
TPGT18151LF	TPGT090204LF	7/32	5,56	.379	9,63	3/32	2,38	1/64	0,4	.104	2,65	
TPGT2150LF	TPGT110201LF	1/4	6,35	.433	11,00	3/32	2,38	.004	0,1	.110	2,80	
TPGT21505LF	TPGT110202LF	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	
TPGT2151LF	TPGT110204LF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPGT2152LF	TPGT110208LF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPGT3251LF	TPGT16T304LF	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TPGT3252LF	TPGT16T308LF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TPMT181505LF	TPMT090202LF	7/32	5,56	.379	9,63	3/32	2,38	.008	0,2	.104	2,65	TPMT-LF
TPMT18151LF	TPMT090204LF	7/32	5,56	.379	9,63	3/32	2,38	1/64	0,4	.104	2,65	
TPMT21505LF	TPMT110202LF	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	
TPMT2151LF	TPMT110204LF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPMT2152LF	TPMT110208LF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	
TPMT3251LF	TPMT16T304LF	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TPMT3252LF	TPMT16T308LF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TPMT3253LF	TPMT16T312LF	3/8	9,53	.650	16,50	5/32	3,97	3/64	1,2	.173	4,40	
TPMT432LF	TPMT220408LF	1/2	12,70	.866	22,00	3/16	4,76	1/32	0,8	.217	5,50	
TPMT2152MF	TPMT110208MF	1/4	6,35	.433	11,00	3/32	2,38	1/32	0,8	.110	2,80	TPMT-MF
TPMT3252MF	TPMT16T308MF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
TPMT3253MF	TPMT16T312MF	3/8	9,53	.650	16,50	5/32	3,97	3/64	1,2	.173	4,40	
TPMT21505UF	TPMT110202UF	1/4	6,35	.433	11,00	3/32	2,38	.008	0,2	.110	2,80	TPMT-UF
TPMT2151UF	TPMT110204UF	1/4	6,35	.433	11,00	3/32	2,38	1/64	0,4	.110	2,80	
TPMT3251UF	TPMT16T304UF	3/8	9,53	.650	16,50	5/32	3,97	1/64	0,4	.173	4,40	
TPMT3252UF	TPMT16T308UF	3/8	9,53	.650	16,50	5/32	3,97	1/32	0,8	.173	4,40	
VBGW331E	VBGW160404E	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	VBGW -E -F
VBGW331F	VBGW160404F	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	
VBGW332E	VBGW160408E	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	.173	4,40	
VBGW331S0415MT	VBGW160404S01015MT	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	VBGW-MT
VBGW332S0415MT	VBGW160408S01015MT	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	.173	4,40	
VBGT2205HP	VBGT110302HP	1/4	6,35	.436	11,07	1/8	3,18	.008	0,2	.110	2,80	VBGT-HP
VBGT221HP	VBGT110304HP	1/4	6,35	.436	11,07	1/8	3,18	1/64	0,4	.110	2,80	
VBGT331HP	VBGT160404HP	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	
VBGT332HP	VBGT160408HP	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: TPGT181505LF
Insert grade: KC5010

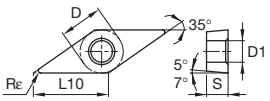
SCREW-ON Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT P KT315	P KC5010	P KC9110	P KC9125	P KC8050	M KT315	M KC5010	M KC5025	M KC9225	M KC9240	K KT315	K KC5010	K KC9315	K KC9325	K KD120	N K313	N KC5410	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	S KC9225	S KC9240	S KD120	H KY1615	H KB9610	H KB5625	KENNA UNIVERSAL KU10T	KU30T
VBGT-LF 	VBGT22X0LF								●															●							
	VBGT220LF		●					●	●				●					●					●	●								
	VBGT2205LF		●					●	●				●					●					●	●								
	VBGT221LF		●					●	●				●					●					●	●								
	VBGT33X0LF								●															●							
	VBGT330LF		●					●	●				●					●					●	●								
	VBGT3305LF		●					●	●				●					●					●	●								
	VBGT331LF		●					●	●				●					●				●	●	●								
VBMT-11 	VBMT220511	●					●					●																			
	VBMT22111	●					●					●																			
	VBMT33111	●					●					●																			
	VBMT33211	●					●					●																			
VBMT-LF 	VBMT2205LF	●	●				●	●				●	●				●				●		●								●	●
	VBMT221LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	VBMT222LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	
	VBMT3305LF	●	●				●	●	●			●	●				●				●	●	●	●								
	VBMT331LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
	VBMT332LF	●	●	●	●	●	●	●	●	●	●	●	●	●			●				●		●	●	●	●					●	●
VCGT-HP 	VCGT332HP																●				●											
WCMT-LF 	WCMT2151LF	●	●				●	●	●			●	●										●	●								
	WCMT3252LF	●	●				●	●	●			●	●										●	●								
WPMT-LF	WPMT15121LF		●					●	●				●										●	●								
	WPMT2151LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						
	WPMT3251LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						
	WPMT3252LF	●	●	●	●	●	●	●	●	●	●	●	●	●									●	●	●	●						

A185-A195 | A216-A235 | A244 | A254-A259 | A6-A19 | A26-A27 | A28-A32 | A33-A37

VB../VC..



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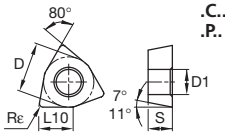
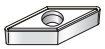
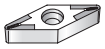
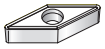
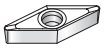
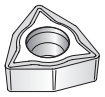


.B..: 5°
.C..: 7°
.P.. : 11°

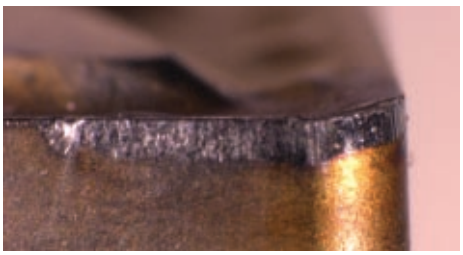
ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	L10 inch	L10 mm	S inch	S mm	Rε inch	Rε mm	D1 inch	D1 mm	
VBGT22X0LF	VBGT1103X0LF	1/4	6,35	.436	11,07	1/8	3,18	.0015	0,04	.110	2,80	VBGT-LF
VBGT220LF	VBGT110301LF	1/4	6,35	.436	11,07	1/8	3,18	.004	0,1	.110	2,80	
VBGT2205LF	VBGT110302LF	1/4	6,35	.436	11,07	1/8	3,18	.008	0,2	.110	2,80	
VBGT221LF	VBGT110304LF	1/4	6,35	.436	11,07	1/8	3,18	1/64	0,4	.110	2,80	
VBGT33X0LF	VBGT1604X0LF	3/8	9,53	.654	16,61	3/16	4,76	.0015	0,04	.173	4,40	
VBGT330LF	VBGT160401LF	3/8	9,53	.654	16,61	3/16	4,76	.004	0,1	.173	4,40	
VBGT3305LF	VBGT160402LF	3/8	9,53	.654	16,61	3/16	4,76	.008	0,2	.173	4,40	
VBGT331LF	VBGT160404LF	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	
VBMT220511	VBMT11030211	1/4	6,35	.436	11,07	1/8	3,18	.008	0,2	.110	2,80	VBMT-11
VBMT22111	VBMT11030411	1/4	6,35	.436	11,07	1/8	3,18	1/64	0,4	.110	2,80	
VBMT33111	VBMT16040411	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	
VBMT33211	VBMT16040811	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	.173	4,40	
VBMT2205LF	VBMT110302LF	1/4	6,35	.436	11,07	1/8	3,18	.008	0,2	.110	2,80	VBMT-LF
VBMT221LF	VBMT110304LF	1/4	6,35	.436	11,07	1/8	3,18	1/64	0,4	.110	2,80	
VBMT222LF	VBMT110308LF	1/4	6,35	.436	11,07	1/8	3,18	1/32	0,8	.110	2,80	
VBMT3305LF	VBMT160402LF	3/8	9,53	.654	16,61	3/16	4,76	.008	0,2	.173	4,40	
VBMT331LF	VBMT160404LF	3/8	9,53	.654	16,61	3/16	4,76	1/64	0,4	.173	4,40	
VBMT332LF	VBMT160408LF	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	.173	4,40	
VCGT332HP	VCGT160408HP	3/8	9,53	.654	16,61	3/16	4,76	1/32	0,8	-	-	VCGT-HP
WCMT2151LF	WCMT040204LF	1/4	6,35	.171	4,34	3/32	2,38	1/64	0,4	.110	2,80	WCMT-LF
WCMT3252LF	WCMT06T308LF	3/8	9,53	.257	6,52	5/32	3,97	1/32	0,8	.173	4,40	
WPMT15121LF	WPMTS3T104LF	3/16	4,76	.128	3,25	5/64	1,98	1/64	0,4	.085	2,15	WPMT-LF
WPMT2151LF	WPMT040204LF	1/4	6,35	.171	4,34	3/32	2,38	1/64	0,4	.110	2,80	
WPMT3251LF	WPMT06T304LF	3/8	9,53	.257	6,52	5/32	3,97	1/64	0,4	.173	4,40	
WPMT3252LF	WPMT06T308LF	3/8	9,53	.257	6,52	5/32	3,97	1/32	0,8	.173	4,40	

Order example:
ANSI catalog number: VBGT22X0LF
Insert grade: KC5025

Failure Mechanism Analysis and Corrective Actions

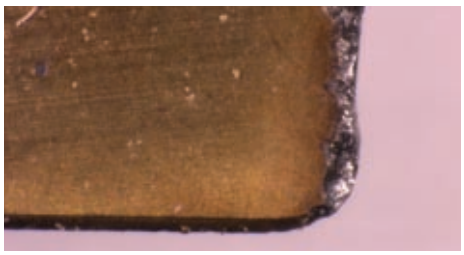
Edge Wear*



Corrective Action

- Increase feed rate.
- Reduce speed (sfm).
- Use more wear resistant grade.
- Apply coated grade.

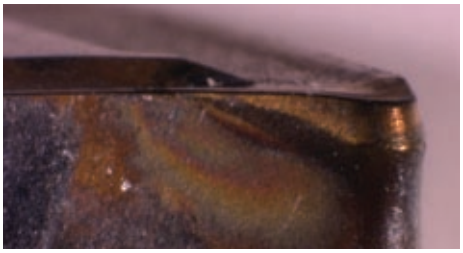
Chipping



Corrective Action

- Utilize stronger grade.
- Consider edge preparation.
- Check rigidity of system.
- Increase lead angle.

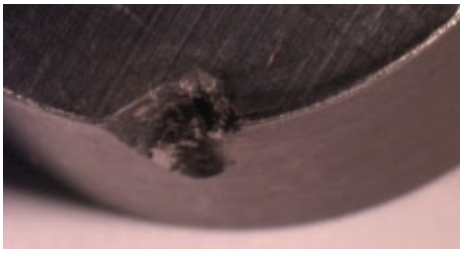
Heat Deformation



Corrective Action

- Reduce speed.
- Reduce feed.
- Reduce depth-of-cut (doc).
- Use grade with higher hot hardness.

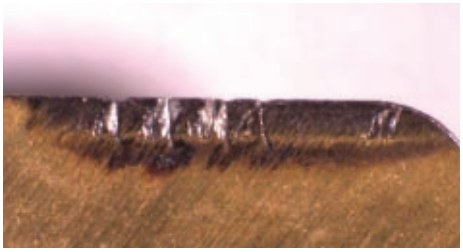
Depth-of-Cut Notching



Corrective Action

- Change lead angle.
- Consider edge preparation.
- Apply different grade.

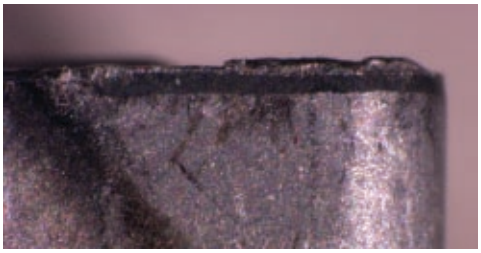
Thermal Cracking



Corrective Action

- Properly apply coolant.
- Reduce speed.
- Reduce feed.
- Apply coated grades.

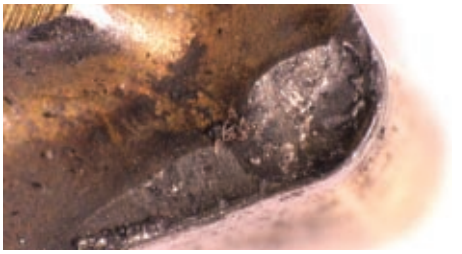
Built-Up Edge



Corrective Action

- Increase speed (sfm).
- Increase feed rate.
- Apply coated grades or cermets.
- Utilize coolant.
- Edge prep (smaller hone).

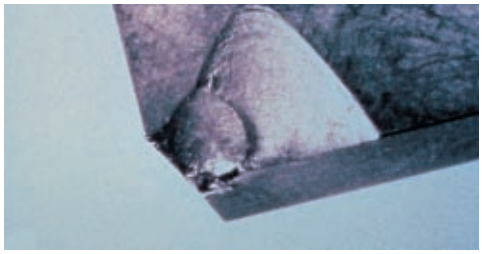
Crater



Corrective Action

- Reduce feed rate.
- Reduce speed (sfm).
- Apply coated grades or cermets.
- Utilize coolant.

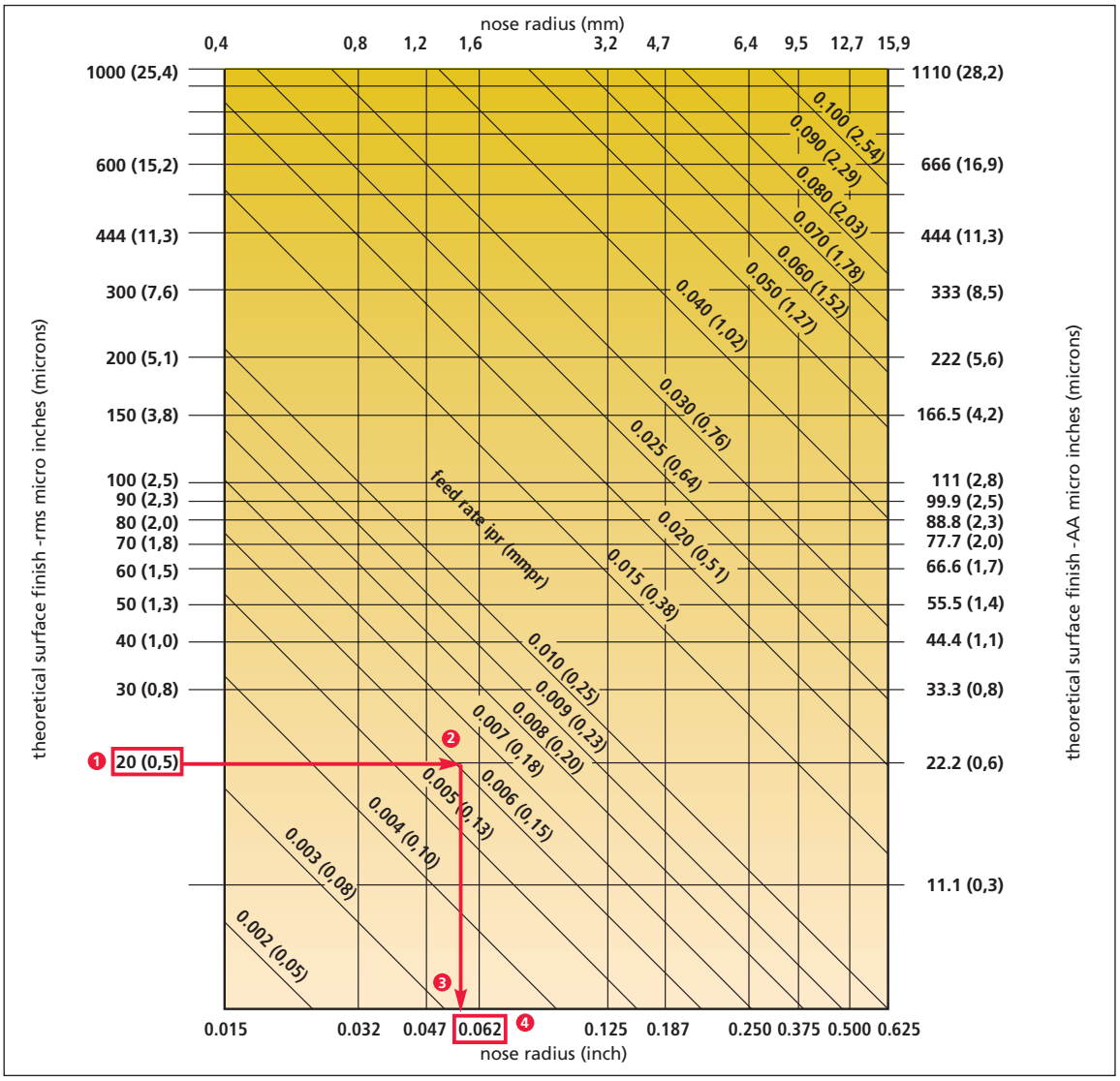
Catastrophic Breakage



Corrective Action

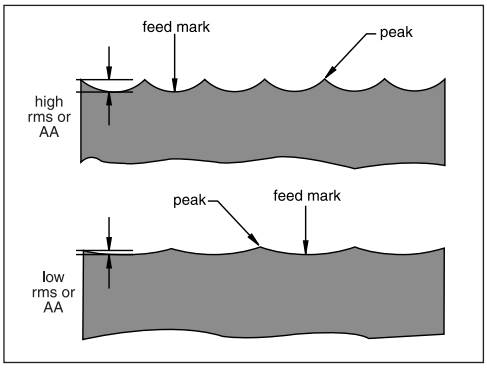
- Utilize stronger insert geometry or grade.
- Reduce feed rate.
- Reduce depth-of-cut (doc).
- Check rigidity of system.

*NOTE: Generally, inserts should be indexed when .030" (0,7 mm) flank wear is reached. For finishing operations, index at .015" (0,4 mm) flank wear or sooner.



Nose radius and feed rate have the greatest impact on surface finish. To determine the nose radius required for a theoretical surface finish, use the following procedure and the chart above.

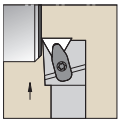
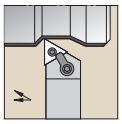
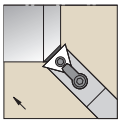
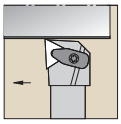
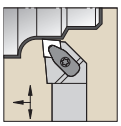
1. Locate the required surface finish (rms or AA) on the vertical axis.
2. Follow the horizontal line corresponding to the desired theoretical finish to where it intersects the diagonal line corresponding to the intended feed rate.
3. Project a line downward to the nose radius scale and read the required nose radius.
4. If this line falls between two values, choose the larger value.
   - If no available nose radius will produce the required finish, feed rate must be reduced.
   - Reverse the procedure to obtain surface finish from a given nose radius.

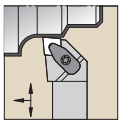
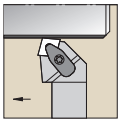
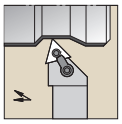
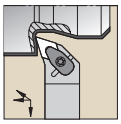
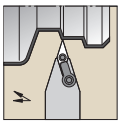


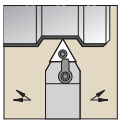
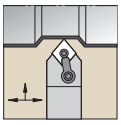
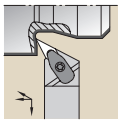
NOTE:
Peaks produced with a small radii insert (top) compared to those produced with a large radius insert (bottom).

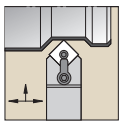
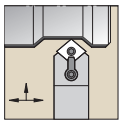
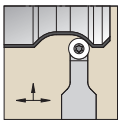
***NOTE: See pages A20 - A23 for radius and surface finish specifications using wiper-style inserts.**

Toolholder Selection Guide

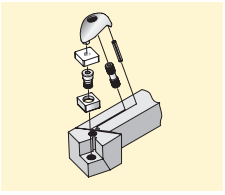
Tool Path	Lead Angle	Clamping Style and Insert Shape	Turning	Profiling	Facing	Plunging	Chamfering	Page
		0° Lead Angle						
	0°	C 80°						
		KENLOC	●		●			A158
		SCREW-ON	●					A185/A186
					●			A185
		D 55°						
		SCREW-ON	●	●				A189
		V 35°						
		SCREW-ON	●	●				A194
		T 60°						
		KENLOC	●			●	●	A164/A166
								A165
					●			A165/A166
			●	●				A164
		KENCLAMP	●					A156
					●			A155
		KENDEX	●					A178/A182
			●					A180/A184
					●			A179/A183
		SCREW-ON	●					A192/A193
		-3° Lead Angle						
	-3°	D 55°						
		KENLOC	●	●				A160
		KENCLAMP	●	●				A153
		SCREW-ON	●	●				A190
		TNT	●	●				A173
		V 35°						
		KENLOC	●	●				A168
		KENCLAMP	●	●				A156
		SCREW-ON	●	●				A194/A195
		F 50°						
		SCREW ON	●	●				A191
		T 60°						
		KENLOC	●	●				A166/A167
		KENCLAMP	●					A156
		SCREW-ON	●					A194
		WEDGELOCK	●	●				A171
		-5° Lead Angle						
	-5°	C 80°						
		KENLOC	●	●	●			A159/A170
		KENCLAMP	●	●	●			A153
		KENDEX	●	●	●			A176/A181
		SCREW-ON	●	●	●			A187/A188
		TNT	●	●	●			A172

Tool Path	Lead Angle	Clamping Style and Insert Shape	Turning	Profiling	Facing	Plunging	Chamfering	Page
	-5°	W 80°						
		KENLOC	●	●	●			A169
		KENCLAMP	●	●	●			A157
		SCREW-ON	●	●	●			A195
		TNT	●	●	●			A175
		WEDGELOCK	●	●	●			A171
		15° and -15° Lead Angle						
	15°	C 80°						
		KENLOC	●					A160
					●			A158
		KENCLAMP	●					A152
					●			A153
		KENDEX	●					A176
		SCREW-ON			●			A186
			●					A189
		TNT	●					A172
		S 90°						
		KENLOC	●					A163/A170
					●			A163
		KENCLAMP	●					A155
					●			A154
		KENDEX			●			A177/A181
			●					A178/A182
		TNT	●					A175
					●			A174
		T 60°						
		KENLOC	●					A167
				●				A167
		KENDEX	●					A179/A182
	-15°	WEDGELOCK	●	●	●			A171
		17.5° and -17.5° Lead Angle						
	-17.5°	D 55°						
		KENLOC	●	●				A161
		KENCLAMP	●	●				A153
		TNT	●	●				A173
		F 50°						
		SCREW-ON	●	●				A191
		V 35°						
	17.5°	KENLOC		●				A168
		KENCLAMP		●				A157

Tool Path	Lead Angle	Clamping Style and Insert Shape	Turning	Profiling	Facing	Plunging	Chamfering	Page
27.5° Lead Angle								
	27.5°	55° D						
		KENLOC	●	●				A161
		KENCLAMP	●	●				A153
		SCREW-ON		●				A190
30° Lead Angle								
	30°	60° T						
		KENLOC	●	●				A165
		KENDEX	●	●				A179
			●					A183
		WEDGELOCK	●	●				A171
40° Lead Angle								
	40°	80° C						
		KENLOC	●	●	●			A159
		SCREW-ON	●	●	●			A188
117.5° Lead Angle								
	117.5°	35° V						
		KENCLAMP	●		●			A157

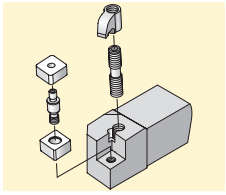
Tool Path	Lead Angle	Clamping Style and Insert Shape	Turning	Profiling	Facing	Plunging	Chamfering	Page
45° Lead Angle								
	45°	90° S						
		KENLOC	●	●	●			A162/A164
		KENCLAMP	●		●			A155
			●	●	●			A154
		KENDEX	●	●				A177/A181
			●		●			A178/A182
		TNT	●	●	●			A174/A175
50° Lead Angle								
	50°	80° C						
		KENLOC	●	●				A158
		KENDEX	●	●	●			A181
		R						
		KENLOC	●		●			A162/A170
		KENCLAMP	●		●			A154
		KENDEX	●		●			A176/A177
		SCREW-ON	●	●	●			A191/A192

Clamping Styles



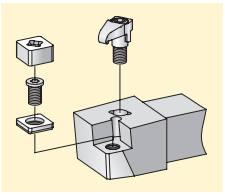
KENCLAMP Style

- Industry´s quickest insert indexing system
- Ensures insert repeatability and seating
- Reduced chatter and improved tool life



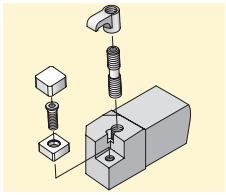
KENLOC Style

- Lock pin and top clamp provide rigid clamping
- Wide variety of insert styles can be used
- Tools can be used with or without clamp



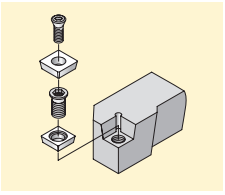
TOP NOTCH Turning Style

- Proven superior system in holding ceramic inserts rigidly in turning and profiling operations
- Uses standard insert sizes – 80°, 55°, square, and trigon
- This system offers added versatility of using optional hardware to hold standard KENDEX and KENLOC inserts



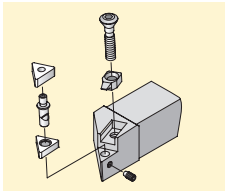
KENDEX Style

- Suitable for KENDEX inserts
- Chipbreaker option available for ceramic inserts
- Wide variety of insert styles can be used



SCREW-ON Style

- Top clamping by screw for SCREW-ON inserts

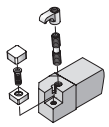
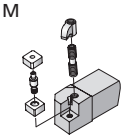
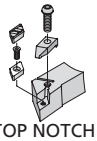
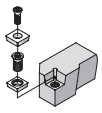
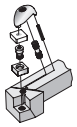


WEDGELOCK Style

- Top and hole clamping for inserts with hole

Toolholder Identification System

1. Insert Holding Method

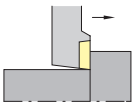
C  KENDEX	M  KENLOC
N*  TOP NOTCH Profiling	S  SCREW-ON
D*  KENCLAMP	

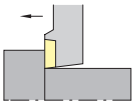
*Kennametal only

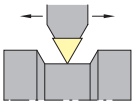
2. Insert Shape

C	D	K/N
L	R	S
T	V	W

5. Hand of Tool

R 

L 

N 

6. Additional Information

P
polycrystalline insert

C
deep pocket for ceramic insert

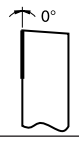
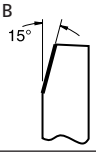
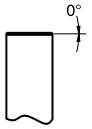
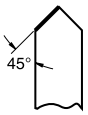
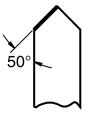
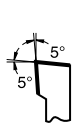
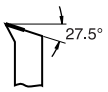
S
single pocket locating wall

F
straight shank, no offset

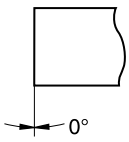
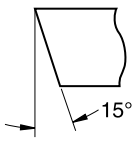
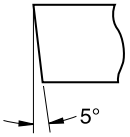
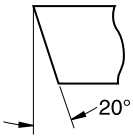
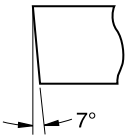
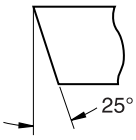
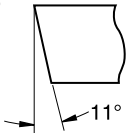
Example:

M	C	L	N	R	

3. Tool Style or Lead Angle

A  0°	B  15°	C  0°	D  45°	E 30°
F 0°	G 0°	H  50°	J 3°	K 15°
L  5° 5°	M 40°	P 27.5°	Q  27.5°	R 15°
S 45°	U 3°	V 17.5°	Y 5°	

4. Insert Clearance Angle

N  0°	D  15°	
B  5°	E  20°	
C  7°	F  25°	
P  11°		

Qualified Surface and Length

A – qualified back and end, 4" long
B – qualified back and end, 4.5" long
C – qualified back and end, 5" long
D – qualified back and end, 6" long
E – qualified back and end, 7" long
F – qualified back and end, 8" long
G* – qualified back and end, 5.5" long
H* – qualified back and end, 5.625" long
I* – qualified back and end, 3" long
J* – qualified back and end, 5.3" long
K* – qualified back and end, 14" long
L* – qualified back and end, 6.8" long
M – qualified front and end, 4" long
N – qualified front and end, 4.5" long
P – qualified front and end, 5" long
R – qualified front and end, 6" long
S – qualified front and end, 7" long
T – qualified front and end, 8" long
U* – qualified front and end, 5.5" long
V* – qualified back and end, 3.5" long
W*– qualified front and end, 3.5" long
Y* – qualified back and end, 3.75" long
Z* – qualified back and end, 3.250" long

*Kennametal standard only.

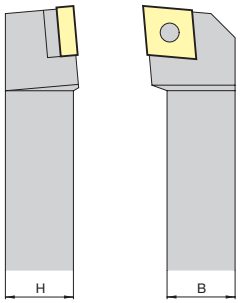
Insert IC

Number of 1/8ths of "D"

9. Insert Size	10. Qualified Surface and Length		
1 6	4	D	

7./8. Shank Dimensions

The seventh and eighth positions shall be a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and over, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width "B" and the second digit the number of quarters of height "H", except for a toolholder 1 1/4" x 1 1/2" which is given the number 91.



11. Additional Information

R
radial clearance for 4" minimum bore

S
3.00 minimum bore

KC
Kenclamp

H4
Wedgelock clamping system

M..
TNT/MTS clamping system for ceramic and PCBN inserts

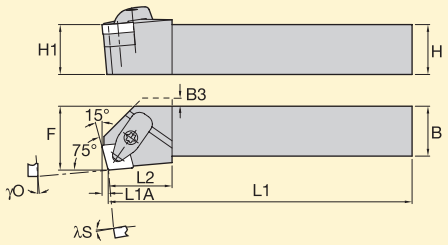
12. Insert Thickness (optional)

3 – .188"
4 – .250"

KENCLAMP Toolholders

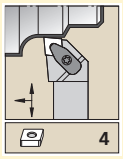
KENLOC Inserts

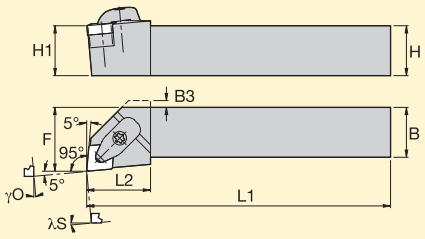
DCKN-KC 15°



Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DCKN R/L 124BKC3	.75	.75	1.000	4.50	1.25	-	.122	.22	-5.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCKN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	.122	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCKN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	.122	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCKN R/L 204DKC3	1.25	1.25	1.500	6.00	1.25	-	.122	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCKN R/L 205DKC4	1.25	1.25	1.500	6.00	1.25	-	.150	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCKN R/L 206DKC4	1.25	1.25	1.500	6.00	1.50	-	.183	-	-5.0	-5.0	**CN..643**	**ICSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP

DCLN-KC -5°

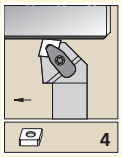


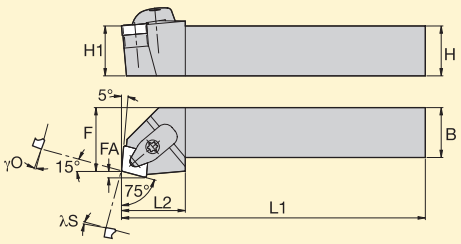


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DCLN R/L 123BKC3	.75	.75	1.000	4.50	1.12	-	-	.06	-5.0	-5.0	**CN..332**	**ICSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 163DKC3	1.00	1.00	1.250	6.00	1.12	-	-	-	-5.0	-5.0	**CN..332**	**ICSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 124BKC3	.75	.75	1.000	4.50	1.25	-	-	.15	-5.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 854DKC3	1.25	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 204DKC3	1.25	1.25	1.500	6.00	1.25	-	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 244DKC3	1.50	1.50	2.000	6.00	1.25	-	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 165CKC4	1.00	1.00	1.250	5.00	1.38	-	-	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 165DKC4	1.00	1.00	1.250	6.00	1.38	-	-	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 205DKC4	1.25	1.25	1.500	6.00	1.38	-	-	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 245DKC4	1.50	1.50	2.000	6.00	1.38	-	-	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCLN R/L 166DKC4	1.00	1.00	1.250	6.00	1.62	-	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
DCLN R/L 206DKC4	1.25	1.25	1.500	6.00	1.62	-	-	-	-5.0	-5.0	**CN..643**	**ICSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
DCLN R/L 246DKC4	1.50	1.50	2.000	6.00	1.62	-	-	-	-5.0	-5.0	**CN..643**	**ICSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
DCLN R/L 246EKC4	1.50	1.50	2.000	7.00	1.62	-	-	-	-5.0	-5.0	**CN..643**	**ICSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP

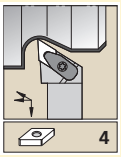
Order example:
Right hand: **DCKNR124BKC3**
Left hand: **DCKNL124BKC3**

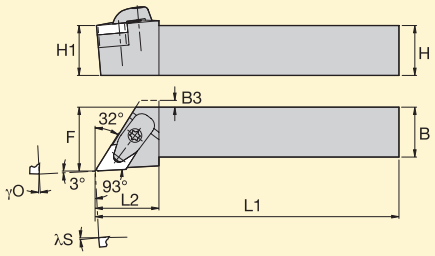
DCRN-KC 15°





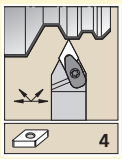
DDJN-KC -3°

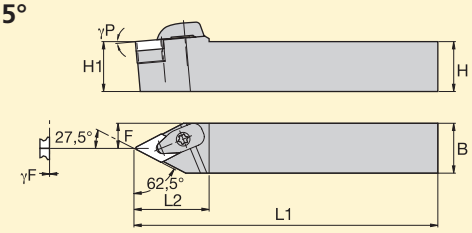




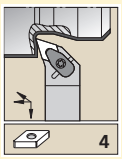
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DCRN R/L 124BKC3	.75	.75	.878	4.50	1.25	.12	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCRN R/L 164DKC3	1.00	1.00	1.128	6.00	1.25	.12	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCRN R/L 204DKC3	1.25	1.25	1.378	6.00	1.25	.12	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCRN R/L 244DKC3	1.50	1.50	2.000	6.00	1.25	.12	-	-	-5.0	-5.0	**CN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DCRN R/L 245DKC4	1.50	1.50	1.851	6.00	1.38	.15	-	-	-5.0	-5.0	**CN..543**	**ICSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DCRN R/L 206DKC4	1.25	1.25	1.501	6.00	1.38	.18	-	-	-5.0	-5.0	**CN..643**	**ICSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
									λS°	γO°								
DDJN R/L 123BKC3	.75	.75	1.000	4.50	1.25	-	-	.06	-5.0	-5.0	**DN..332**	**IDSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 163CKC3	1.00	1.00	1.250	5.00	1.25	-	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 163DKC3	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 203DKC3	1.25	1.25	1.500	6.00	1.25	-	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 204DKC3	1.25	1.25	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 165DKC4	1.00	1.00	1.250	6.00	1.38	-	-	.15	-5.0	-5.0	**DN..543**	**IDSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 205DKC4	1.25	1.25	1.500	6.00	1.38	-	-	-	-5.0	-5.0	**DN..543**	**IDSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DDJN R/L 245DKC4	1.50	1.50	2.000	6.00	1.38	-	-	-	-5.0	-5.0	**DN..543**	**IDSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP

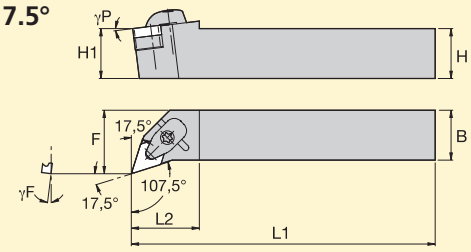
DDPN-KC 27.5°





DDQN-KC -17.5°





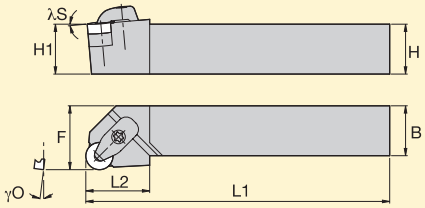
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DDPNN164DKC3	1.00	1.00	.500	6.00	1.62	-	-	-	0.0	-10.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
									γF°	γP°								
DDQN R/L 164CKC3	1.00	1.00	1.250	5.00	1.38	-	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDQN R/L 164DKC3	1.00	1.00	1.250	6.00	1.38	-	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DDQN R/L 204DKC3	1.25	1.25	1.500	6.00	1.38	-	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP

Order example:
Right hand: **DCRNR124BKC3**
Left hand: **DCRNL124BKC3**

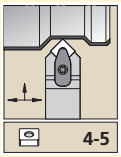
KENCLAMP Toolholders

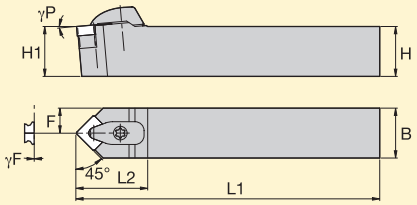
KENLOC Inserts

DRGN-KC



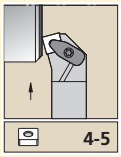
DSDN-KC 45°

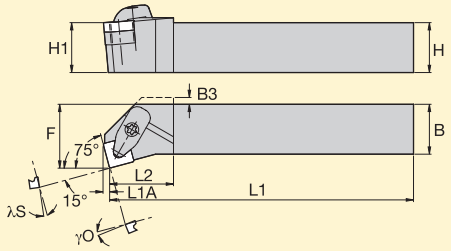




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DRGN R/L 124BKC3	.75	.75	1.000	4.50	1.25	-	-	-	-5.0	-5.0	**RN..43**	**IRSN43**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 204DKC3	1.25	1.25	1.500	6.00	1.25	-	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 244DKC3	1.50	1.50	2.000	6.00	1.25	-	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 165DKC4	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**RN..54**	**IRSN54**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 205DKC4	1.25	1.25	1.500	6.00	1.25	-	-	-	-5.0	-5.0	**RN..54**	**IRSN54**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DRGN R/L 206DKC4	1.25	1.25	1.500	6.00	1.38	-	-	-	-5.0	-5.0	**RN..64**	**IRSN64**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
									γF°	γP°								
DSDNN124KC3	.75	.75	.365	4.50	1.44	-	-	-	0.0	-7.0	**SN..432**	**ISSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSDNN164KC3	1.00	1.00	.500	6.00	1.44	-	-	-	0.0	-7.0	**SN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSDNN204KC3	1.25	1.25	.625	6.00	1.44	-	-	-	0.0	-7.0	**SN..432**	**ICSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSDNN206KC4	1.25	1.25	.615	6.00	1.75	-	-	-	0.0	-7.0	**SN..643**	**ISSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
DSDNN246KC4	1.50	1.50	.615	6.00	1.75	-	-	-	0.0	-7.0	**SN..643**	**ISSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP

DSKN-KC 15°

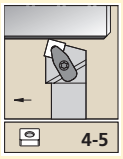


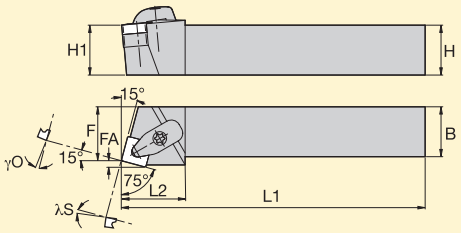


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DSKN R/L 124BKC3	.75	.75	1.000	4.50	1.25	-	.12	.30	-5.0	-5.0	**SN..432**	**ISSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSKN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	.12	.12	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSKN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	.12	.12	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSKN R/L 204DKC3	1.25	1.25	1.500	6.00	1.25	-	.12	.12	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSKN R/L 206DKC4	1.25	1.25	1.500	6.00	1.50	-	.18	.12	-5.0	-5.0	**SN..643**	**ISSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP

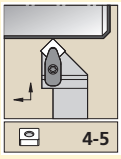
Order example:
Right hand: **DRGNR124BKC3**
Left hand: **DRGNL124BKC3**

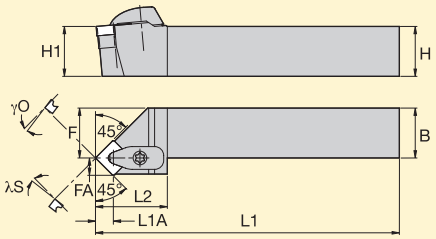
DSRN-KC 15°





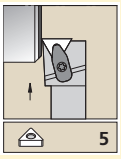
DSSN-KC 45°

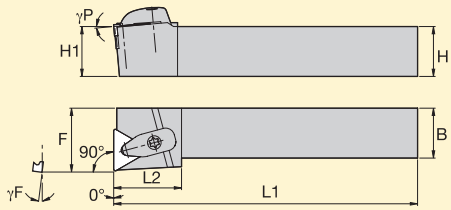




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DSRN R/L 124BKC3	.75	.75	.880	4.50	1.25	.12	-	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 164CKC3	1.00	1.00	1.130	5.00	1.25	.12	-	-	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 164DKC3	1.00	1.00	1.130	6.00	1.25	.12	-	-	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 204DKC3	1.25	1.25	1.380	6.00	1.25	.12	-	-	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 244DKC3	1.50	1.50	1.880	6.00	1.25	.12	-	-	-5.0	-5.0	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 165DKC4	1.00	1.00	1.103	6.00	1.50	.15	-	-	-5.0	-5.0	**SN..543**	**ISSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 205DKC4	1.25	1.25	1.353	6.00	1.50	.15	-	-	-5.0	-5.0	**SN..543**	**ISSN543**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DSRN R/L 206DKC4	1.25	1.25	1.321	6.00	1.50	.18	-	-	-5.0	-5.0	**SN..643**	**ISSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
DSRN R/L 246DKC4	1.50	1.50	1.821	6.00	1.50	.18	-	-	-5.0	-5.0	**SN..643**	**ISSN643**	**KMSP625IP**	25 IP	**CM210**	**SSP025016M**	**STCM425IP**	25 IP
									λS°	γO°								
DSSN R/L 164DKC3	1.00	1.00	.912	6.00	1.50	.34	.33	-	-5.5	-8.4	**SN..432**	**ISSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP

DTFN-KC 0°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λF°	γP°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DTFN R/L 123BKC3	.75	.75	1.000	4.50	1.25	-	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 163CKC3	1.00	1.00	1.250	5.00	1.25	-	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 163DKC3	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 164CKC3	1.00	1.00	1.250	5.00	1.38	-	-	-	-5.0	-5.0	**TN..432**	**ITSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 164DKC3	1.00	1.00	1.250	6.00	1.38	-	-	-	-5.0	-5.0	**TN..432**	**ITSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 165CKC4	1.00	1.00	1.250	5.00	1.50	-	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DTFN R/L 205DKC4	1.25	1.25	1.500	6.00	1.50	-	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP

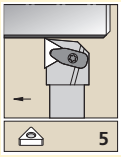
Order example:
Right hand: **DSRNR124BKC3**

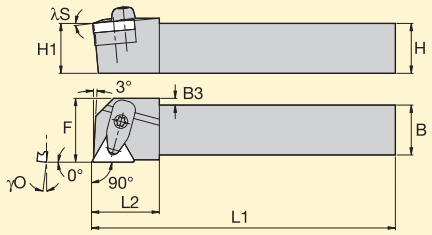
Left hand: **DSRNL124BKC3**

KENCLAMP Toolholders

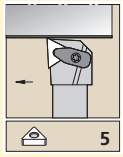
KENLOC Inserts

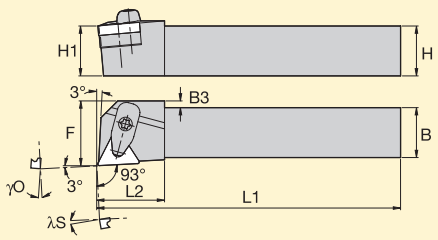
DTGN-KC 0°





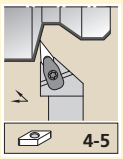
DTJN-KC -3°

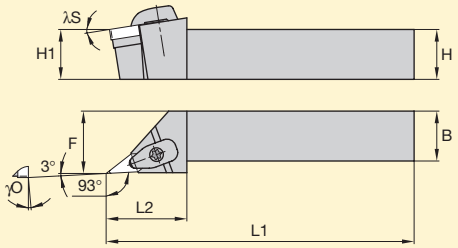




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DTGN R/L 123BKC3	.75	.75	1.000	4.50	1.12	-	-	.25	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTGN R/L 163DKC3	1.00	1.00	1.250	6.00	1.12	-	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTGN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	-	.09	-5.0	-5.0	**TN..432**	**ITSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTGN R/L 165CKC4	1.00	1.00	1.250	5.00	1.50	-	-	.25	-5.0	-5.0	**TN..543**	**ITSN534**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
DTGN R/L 205DKC4	1.25	1.25	1.500	6.00	1.50	-	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KMSP515IP**	15 IP	**CM209**	**SSP025016M**	**STCM1115IP**	15 IP
									λS°	γO°								
DTJN R/L 123BKC3	.75	.75	1.000	4.50	1.12	-	-	.28	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTJN R/L 163CKC3	1.00	1.00	1.250	5.00	1.12	-	-	.09	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTJN R/L 163DKC3	1.00	1.00	1.250	6.00	1.12	-	-	.09	-5.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTJN R/L 164CKC3	1.00	1.00	1.250	5.00	1.25	-	-	.12	-5.0	-5.0	**TN..432**	**ITSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DTJN R/L 164DKC3	1.00	1.00	1.250	6.00	1.25	-	-	.12	-5.0	-5.0	**TN..432**	**ITSN443**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP

DVJN-KC -3°

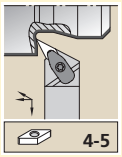


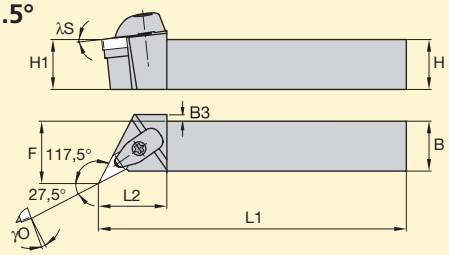


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DVJN R/L 123CKC3	.75	.75	1.000	5.00	1.44	-	-	-	-9.0	-5.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15 IP	**CM215**	**SSP025016M**	**STCM1115IP**	15 IP
DVJN R/L 163DKC3	1.00	1.00	1.250	6.00	1.44	-	-	-	-9.0	-5.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15 IP	**CM215**	**SSP025016M**	**STCM1115IP**	15 IP
DVJN R/L 853DKC3	1.25	1.00	1.250	6.00	1.44	-	-	-	-9.0	-5.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15 IP	**CM215**	**SSP025016M**	**STCM1115IP**	15 IP
DVJN R/L 164DKC3	1.00	1.00	1.250	6.00	2.00	-	-	-	-9.0	-5.0	**VNMA432**	**IVSN432**	**KMSP415IP**	15 IP	**CM235**	**SSP025016M**	**STCM1115IP**	15 IP
DVJN R/L 854DKC3	1.25	1.00	1.250	6.00	2.00	-	-	-	-9.0	-5.0	**VNMA432**	**IVSN432**	**KMSP415IP**	15 IP	**CM235**	**SSP025016M**	**STCM1115IP**	15 IP

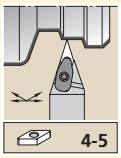
Order example:
Right hand: **DTGNR123BKC3**
Left hand: **DTGNL123BKC3**

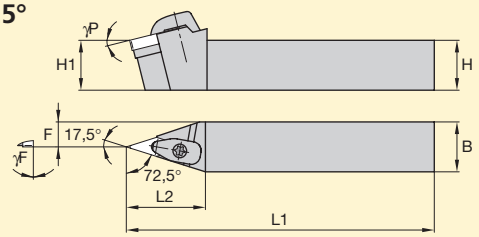
DVON-KC -117.5°





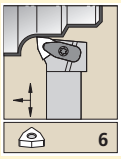
DVVN-KC 17.5°

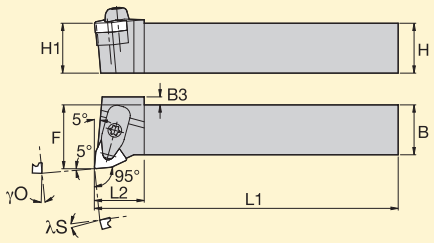




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DVON R/L 123CKC3	.75	.75	1.000	5.00	1.50	-	-	.25	-6.38	-6.38	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
DVON R/L 163DKC3	1.00	1.00	1.250	6.00	1.47	-	-	-	-6.38	-6.38	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
DVON R/L 853DKC3	1.25	1.00	1.250	6.00	1.47	-	-	-	-6.38	-6.38	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
									γF°	γP°								
DVVNN123CKC3	.75	.75	.371	5.00	1.94	-	-	-	0.0	-14.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
DVVNN163DKC3	1.00	1.00	.496	6.00	1.97	-	-	-	0.0	-14.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
DVVNN853DKC3	1.25	1.00	.496	6.00	1.88	-	-	-	0.0	-14.0	**VNMA332**	**IVSN322**	**KMSP315IP**	15IP	**CM215**	**SSP025016M**	**STCM1115IP**	15IP
DVVNN164DKC3	1.00	1.00	.496	6.00	2.28	-	-	-	0.0	-14.0	**VNMA432**	**IVSN432**	**KMSP415IP**	15IP	**CM235**	**SSP025016M**	**STCM1115IP**	15IP
DVVNN854DKC3	1.25	1.00	.496	6.00	2.28	-	-	-	0.0	-14.0	**VNMA432**	**IVSN432**	**KMSP415IP**	15IP	**CM235**	**SSP025016M**	**STCM1115IP**	15IP

DWLN-KC -5°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx plus	Clamp	Slotted Pin	Clamp Screw	Torx plus
DWLN R/L 123BKC3	.75	.75	1.000	4.50	1.00	-	-	.28	-5.0	-5.0	**WN..332**	**IWSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DWLN R/L 163CKC3	1.00	1.00	1.250	5.00	1.00	-	-	.06	-5.0	-5.0	**WN..332**	**IWSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DWLN R/L 163DKC3	1.00	1.00	1.250	6.00	1.00	-	-	.06	-5.0	-5.0	**WN..332**	**IWSN322**	**KMSP315IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DWLN R/L 164CKC3	1.00	1.00	1.250	5.00	1.00	-	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DWLN R/L 164DKC3	1.00	1.00	1.250	6.00	1.00	-	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP
DWLN R/L 204DKC3	1.25	1.25	1.500	6.00	1.00	-	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KMSP415IP**	15 IP	**CM234**	**SSP025016M**	**STCM1115IP**	15 IP

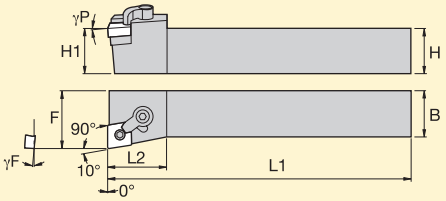
Order example:
Right hand: **DVONR123CKC3**

Left hand: **DVONL123CKC3**

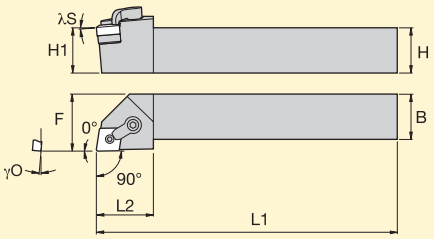
KENLOC Toolholders

KENLOC Inserts

MCFN 0°

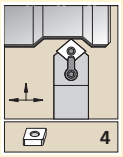


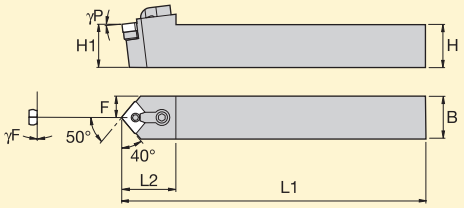
MCGN 0°



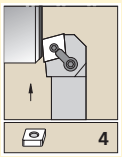
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MCFN R/L 124B	.75	.75	1.000	4.50	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFN R/L 164C	1.00	1.00	1.250	5.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFN R/L 164D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFN R/L 204D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFN R/L 206D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
								λS°	γO°							
MCGN R/L 124B	.75	.75	1.000	4.50	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGN R/L 164C	1.00	1.00	1.250	5.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGN R/L 164D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGN R/L 204D	1.50	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGN R/L 205D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCGN R/L 166D	1.00	1.00	1.250	6.00	1.50	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCGN R/L 206D	1.25	1.25	1.500	6.00	1.50	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

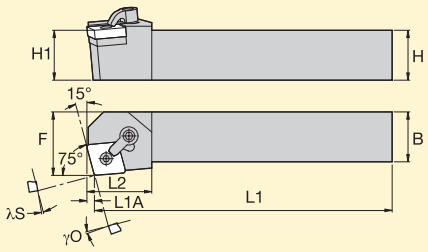
MCHN 50°





MCKN 15°

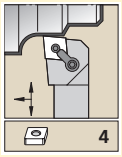


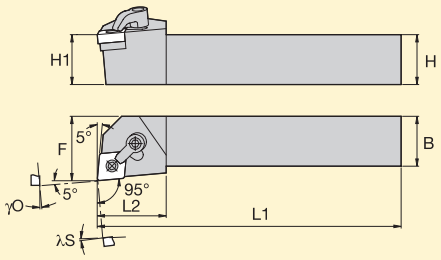


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MCHNN164C	1.00	1.00	.500	5.00	1.25	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
MCHNN205D	1.25	1.25	.625	6.00	1.38	-	-	0.0	-7.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
MCHNN246D	1.50	1.50	.750	6.00	1.60	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
								λS°	γO°							
MCKN R/L 124B	.75	.75	1.000	4.50	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 164C	1.00	1.00	1.250	5.00	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 164D	1.00	1.00	1.250	6.00	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 854D	1.25	1.00	1.250	6.00	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 204D	1.25	1.25	1.500	6.00	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 244D	1.50	1.50	2.000	6.00	1.21	-	.12	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKN R/L 165C	1.00	1.00	1.250	5.00	1.25	-	.15	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKN R/L 165D	1.00	1.00	1.250	6.00	1.25	-	.15	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKN R/L 205D	1.25	1.25	1.500	6.00	1.25	-	.15	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKN R/L 245D	1.50	1.50	2.000	6.00	1.25	-	.15	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKN R/L 166D	1.00	1.00	1.250	6.00	1.44	-	.18	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCKN R/L 206D	1.25	1.25	1.500	6.00	1.47	-	.18	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCKN R/L 246D	1.50	1.50	2.000	6.00	1.47	-	.18	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCKN R/L 246E	1.50	1.50	2.000	7.00	1.47	-	.18	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

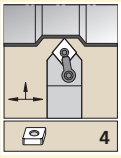
Order example:
Right hand: **MCFNR124B**
Left hand: **MCFNL124B**

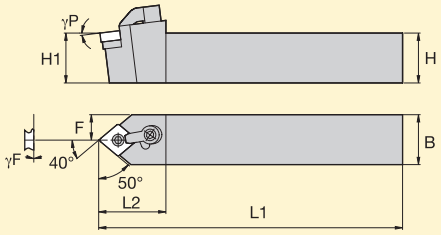
MCLN -5°





MCMN 40°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MCLN R/L 083A	.50	.50	.750	4.00	1.00	-	-	-5.0	-5.0	**CN..322**	**-**	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 103A	.63	.63	.875	4.00	1.00	-	-	-5.0	-5.0	**CN..322**	**-**	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 123B	.75	.75	1.000	4.50	1.00	-	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 163C	1.00	1.00	1.250	5.00	1.00	-	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 163D	1.00	1.00	1.250	6.00	1.00	-	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 203D	1.25	1.25	1.500	6.00	1.00	-	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLN R/L 124A	.75	.75	1.000	4.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 124B	.75	.75	1.000	4.50	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 164C	1.00	1.00	1.250	5.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 164D	1.00	1.00	1.250	6.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 854D	1.25	1.00	1.250	6.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 204D	1.25	1.25	1.500	6.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 244D	1.50	1.50	2.000	6.00	1.20	-	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLN R/L 165C	1.00	1.00	1.250	5.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 165D	1.00	1.00	1.250	6.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 855D	1.25	1.00	1.250	6.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 205D	1.25	1.25	1.500	6.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 245D	1.50	1.50	2.000	6.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 245E	1.50	1.50	2.000	7.00	1.37	-	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLN R/L 166C	1.00	1.00	1.250	5.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 166D	1.00	1.00	1.250	6.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 856D	1.25	1.00	1.250	6.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 866D	1.50	1.00	1.250	6.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 866E	1.50	1.00	1.250	7.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 206D	1.25	1.25	1.500	6.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 246D	1.50	1.50	2.000	6.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 246E	1.50	1.50	2.000	7.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 326F	2.00	2.00	2.500	8.00	1.49	-	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLN R/L 248E	1.50	1.50	2.000	7.00	1.49	-	-	-5.0	-5.0	**CN..866**	**ICSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
								γF°	γP°							
MCMNN123B	.75	.75	.375	4.50	1.00	-	-	0.0	-7.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCMNN203D	1.25	1.25	.625	6.00	1.00	-	-	0.0	-7.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCMNN124B	.75	.75	.375	4.50	1.39	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN164C	1.00	1.00	.500	5.00	1.39	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN164D	1.00	1.00	.500	6.00	1.39	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN854D	1.25	1.00	.500	6.00	1.39	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN204D	1.25	1.25	.625	6.00	1.39	-	-	0.0	-7.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN166D	1.00	1.00	.500	6.00	1.67	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN866E	1.50	1.00	.500	7.00	1.67	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN206D	1.25	1.25	.625	6.00	1.67	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN246D	1.50	1.50	.750	6.00	1.67	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN246E	1.50	1.50	.750	7.00	1.67	-	-	0.0	-7.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

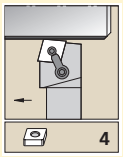
Order example:
Right hand: **MCLNR083A**

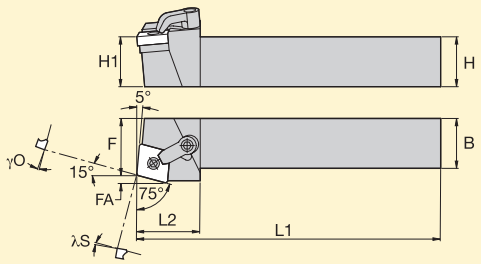
Left hand: **MCLNL083A**

KENLOC Toolholders

KENLOC Inserts

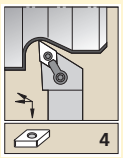
MCRN 15°

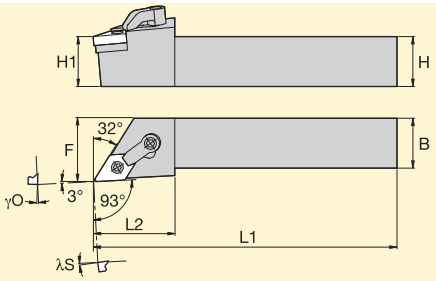




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MCRN R/L 123B	.75	.75	.798	4.50	.88	.09	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCRN R/L 163D	1.00	1.00	1.048	6.00	.88	.09	-	-5.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCRN R/L 124B	.75	.75	.751	4.50	1.24	.12	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRN R/L 164C	1.00	1.00	1.251	5.00	1.24	.12	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRN R/L 164D	1.00	1.00	1.251	6.00	1.24	.12	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRN R/L 204D	1.25	1.25	1.500	6.00	1.24	.12	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRN R/L 244D	1.50	1.50	2.001	6.00	1.24	.12	-	-5.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRN R/L 165D	1.00	1.00	1.251	6.00	1.34	.15	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRN R/L 205D	1.25	1.25	1.501	6.00	1.34	.15	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRN R/L 245D	1.50	1.50	2.001	6.00	1.34	.15	-	-5.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRN R/L 166D	1.00	1.00	1.251	6.00	1.49	.18	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRN R/L 206D	1.25	1.25	1.501	6.00	1.49	.18	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRN R/L 246D	1.50	1.50	2.001	6.00	1.49	.18	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRN R/L 246E	1.50	1.50	2.001	7.00	1.49	.18	-	-5.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRN R/L 248E	1.50	1.50	2.001	7.00	1.62	.24	-	-5.0	-5.0	**CN..866**	**ICSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16

MDJN -3°



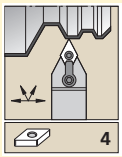


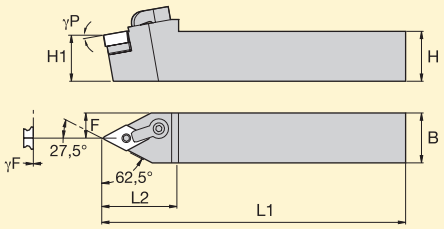
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MDJN R/L 123B	.75	.75	1.000	4.50	1.25	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJN R/L 163C	1.00	1.00	1.250	5.00	1.25	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJN R/L 163D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJN R/L 203D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJN R/L 243D	1.50	1.50	2.000	6.00	1.25	-	-	-5.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJN R/L 124A	.75	.75	1.000	4.00	1.38	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJN R/L 124B	.75	.75	1.000	4.50	1.38	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJN R/L 164C	1.00	1.00	1.250	5.00	1.24	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJN R/L 164D	1.00	1.00	1.250	6.00	1.24	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJN R/L 854D	1.25	1.00	1.250	6.00	1.24	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJN R/L 204D	1.25	1.25	1.500	6.00	1.24	-	-	-5.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJN R/L 165D	1.00	1.00	1.250	6.00	1.47	-	-	-5.0	-5.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJN R/L 205D	1.25	1.25	1.500	6.00	1.47	-	-	-5.0	-5.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJN R/L 245D	1.50	1.50	2.000	6.00	1.47	-	-	-5.0	-5.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJN R/L 245E	1.50	1.50	2.000	7.00	1.47	-	-	-5.0	-5.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32

Order example:
Right hand: **MCRNR123B**

Left hand: **MCRNL123B**

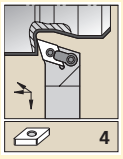
MDPN 27.5°

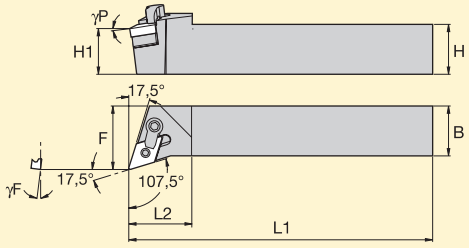




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MDPNN123B	.75	.75	.375	4.50	1.50	-	-	0.0	-10.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN163C	1.00	1.00	.500	5.00	1.50	-	-	0.0	-10.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN163D	1.00	1.00	.500	6.00	1.50	-	-	0.0	-10.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN203D	1.25	1.25	.625	6.00	1.50	-	-	0.0	-10.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN243D	1.50	1.50	.750	6.00	1.50	-	-	0.0	-10.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN164D	1.00	1.00	.500	6.00	1.63	-	-	0.0	-10.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
MDPNN855D	1.25	1.00	.500	6.00	1.92	-	-	0.0	-10.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDPNN865E	1.50	1.00	.500	7.00	1.92	-	-	0.0	-10.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDPNN205D	1.25	1.25	.625	6.00	1.92	-	-	0.0	-10.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDPNN245D	1.50	1.50	.750	6.00	1.92	-	-	0.0	-10.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32

MDQN -17.5°





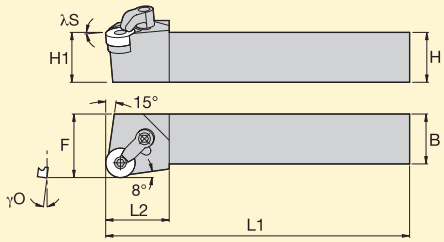
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MDQN R/L 124B	.75	.75	1.000	4.50	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDQN R/L 164C	1.00	1.00	1.250	5.00	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQN R/L 164D	1.00	1.00	1.250	6.00	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQN R/L 204D	1.25	1.25	1.500	6.00	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQN R/L 244D	1.50	1.50	2.000	6.00	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQN R/L 244E	1.50	1.50	2.000	7.00	1.37	-	-	-7.0	-7.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQN R/L 205D	1.25	1.25	1.500	6.00	1.47	-	-	-7.0	-7.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDQN R/L 245D	1.50	1.50	2.000	6.00	1.47	-	-	-7.0	-7.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDQN R/L 245E	1.50	1.50	2.000	7.00	1.47	-	-	-7.0	-7.0	**DN..543**	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32

Order example:
MDPNN123B

KENLOC Toolholders

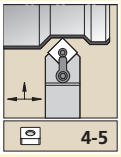
KENLOC Inserts

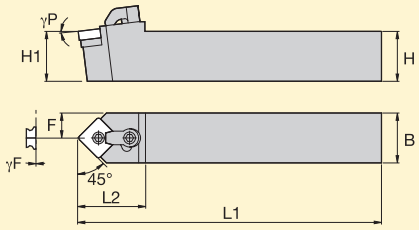
MRGN



Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MRGN R/L 083B	.50	.50	.750	4.50	.88	-	-	-5.0	-5.0	**RN..32**	**-**	**KL33**	5/64	**CK19**	**STC9**	3/32
MRGN R/L 123B	.75	.75	1.000	4.50	.88	-	-	-5.0	-5.0	**RN..32**	**IRSN33**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MRGN R/L 163D	1.00	1.00	1.250	6.00	.88	-	-	-5.0	-5.0	**RN..32**	**IRSN33**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MRGN R/L 124B	.75	.75	1.000	4.50	1.00	-	-	-5.0	-5.0	**RN..43**	**IRSN43**	**KL46**	3/32	**CK21**	**STC20**	1/8
MRGN R/L 164C	1.00	1.00	1.250	5.00	1.00	-	-	-5.0	-5.0	**RN..43**	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGN R/L 164D	1.00	1.00	1.250	6.00	1.00	-	-	-5.0	-5.0	**RN..43**	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGN R/L 204D	1.25	1.25	1.500	6.00	1.00	-	-	-5.0	-5.0	**RN..43**	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGN R/L 165D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**RN..54**	**IRSN53**	**KL58**	1/8	**CK12**	**STC4**	5/32
MRGN R/L 205D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**RN..54**	**IRSN53**	**KL58**	1/8	**CK12**	**STC4**	5/32
MRGN R/L 166D	1.00	1.00	1.250	6.00	1.31	-	-	-5.0	-5.0	**RN..64**	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGN R/L 206D	1.25	1.25	1.500	6.00	1.31	-	-	-5.0	-5.0	**RN..64**	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGN R/L 246D	1.50	1.50	2.000	6.00	1.31	-	-	-5.0	-5.0	**RN..64**	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGN R/L 248E	1.50	1.50	2.000	7.00	1.56	-	-	-5.0	-5.0	**RN..86**	**IRSN84**	**KL810**	5/32	**CK24**	**STC19**	3/16

MSDN 45°



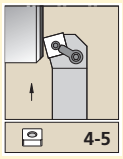


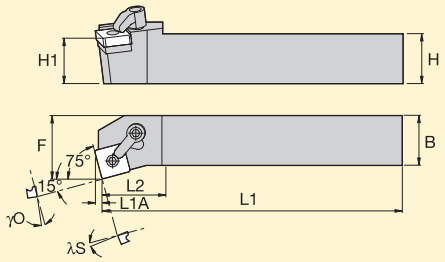
Catalog number	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MSDNN083	.50	.50	.250	4.50	1.14	-	-	0.0	-7.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN103	.63	.63	.312	4.50	1.14	-	-	0.0	-7.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN123	.75	.75	.375	4.50	1.14	-	-	0.0	-7.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN124	.75	.75	.375	4.50	1.39	-	-	0.0	-7.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN164	1.00	1.00	.500	6.00	1.39	-	-	0.0	-7.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN854	1.25	1.00	.500	6.00	1.39	-	-	0.0	-7.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN855	1.25	1.00	.500	6.00	1.62	-	-	0.0	-7.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSDNN856	1.25	1.00	.500	6.00	1.62	-	-	0.0	-7.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN866	1.25	1.25	.500	7.00	1.62	-	-	0.0	-7.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN206	1.25	1.25	.625	7.00	1.62	-	-	0.0	-7.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN246	1.50	1.50	.750	7.00	1.62	-	-	0.0	-7.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

Order example:
Right hand: **MRGNR083B**

Left hand: **MRGNL083B**

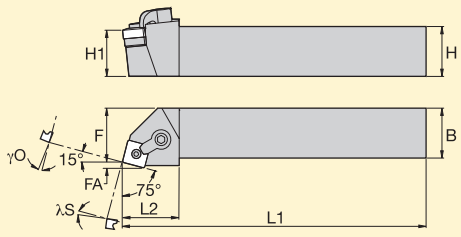
MSKN 15°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MSKN R/L 083B	.50	.50	.625	4.50	1.03	-	.09	-5.0	-5.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSKN R/L 103B	.63	.63	.750	4.50	1.03	-	.09	-5.0	-5.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSKN R/L 123B	.75	.75	.875	4.50	1.03	-	.09	-5.0	-5.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSKN R/L 124B	.75	.75	1.000	4.50	1.25	-	.12	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKN R/L 164C	1.00	1.00	1.250	5.00	1.25	-	.12	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKN R/L 164D	1.00	1.00	1.250	6.00	1.25	-	.12	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKN R/L 854D	1.25	1.00	1.250	6.00	1.25	-	.12	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKN R/L 204D	1.25	1.25	1.500	6.00	1.13	-	.12	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKN R 855D	1.25	1.00	1.250	6.00	1.44	-	.15	-5.0	-5.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSKN R/L 205D	1.25	1.25	1.500	6.00	1.34	-	.15	-5.0	-5.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSKN R/L 206D	1.25	1.25	1.500	6.00	1.50	-	.18	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSKN R/L 246D	1.50	1.50	2.000	6.00	1.50	-	.18	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSKN R/L 248	1.50	1.50	2.000	8.00	1.62	-	.23	-5.0	-5.0	**SN..866**	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16

MSRN 15°



Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MSRN R/L 083B	.50	.50	.660	4.50	1.06	.09	-	-5.0	-5.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSRN R/L 123B	.75	.75	.910	4.50	1.06	.09	-	-5.0	-5.0	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSRN R/L 124B	.75	.75	.880	4.50	1.23	.12	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRN R/L 164C	1.00	1.00	1.130	5.00	1.23	.12	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRN R/L 164D	1.00	1.00	1.130	6.00	1.23	.12	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRN R/L 854D	1.25	1.00	1.130	6.00	1.23	.12	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRN R/L 204D	1.25	1.25	1.380	6.00	1.25	.12	-	-5.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRN R/L 165C	1.00	1.00	1.103	5.00	1.46	.15	-	-5.0	-5.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRN R/L 855D	1.25	1.00	1.103	6.00	1.46	.15	-	-5.0	-5.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRN R/L 205D	1.25	1.25	1.353	6.00	1.46	.15	-	-5.0	-5.0	**SN..543**	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRN R/L 856D	1.25	1.00	1.071	6.00	1.50	.18	-	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRN R/L 206D	1.25	1.25	1.321	6.00	1.50	.18	-	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRN R/L 246D	1.50	1.50	1.821	6.00	1.50	.18	-	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRN R/L 246E	1.50	1.50	1.821	7.00	1.50	.18	-	-5.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRN R/L 248	1.50	1.50	1.770	8.00	1.62	.23	-	-5.0	-5.0	**SN..866**	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
MSRN R/L 328	2.00	2.00	2.270	18.00	1.62	.23	-	-5.0	-5.0	**SN..866**	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16

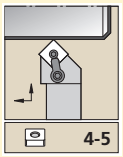
Order example:
Right hand: **MSKNR083B**

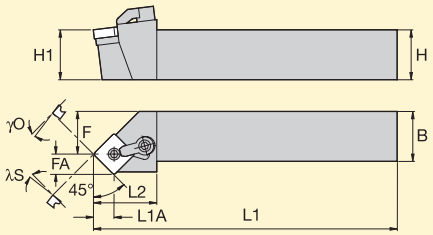
Left hand: **MSKNL083B**

KENLOC Toolholders

KENLOC Inserts

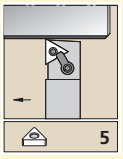
MSSN 45°

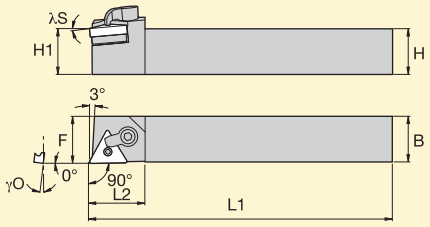




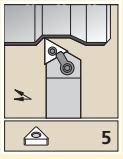
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MSSN R/L 083B	.50	.50	.391	4.50	1.12	.25	.25	-5.5	-8.5	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSSN R/L 103B	.63	.63	.516	4.50	1.12	.25	.25	-5.5	-8.5	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSSN R/L 123B	.75	.75	.641	4.50	1.12	.25	.25	-5.5	-8.5	**SN..322**	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSSN R/L 124B	.75	.75	.662	4.50	1.24	.31	.33	-5.5	-8.5	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSN R/L 164C	1.00	1.00	.912	5.00	1.24	.31	.33	-5.5	-8.5	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSN R/L 164D	1.00	1.00	.912	6.00	1.24	.31	.33	-5.5	-8.5	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSN R/L 854D	1.25	1.00	.912	6.00	1.24	.31	.33	-5.5	-8.5	**SN..432**	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSN R/L 165D	1.00	1.00	.828	6.00	1.38	.42	.42	-5.5	-8.5	**SN..543**	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSN R/L 205D	1.25	1.25	1.078	6.00	1.38	.42	.42	-5.5	-8.5	**SN..543**	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSN R/L 866E	1.50	1.00	.742	7.00	1.48	.52	.53	-5.5	-8.5	**SN..643**	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32
MSSN R/L 206D	1.25	1.25	.992	6.00	1.48	.52	.53	-5.5	-8.5	**SN..643**	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32
MSSN R/L 246D	1.50	1.50	1.511	6.00	1.48	.52	.53	-5.5	-8.5	**SN..643**	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32

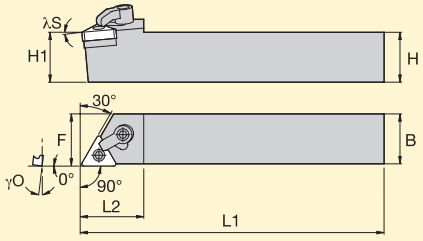
MTAN 0°





MTAN-S 0°



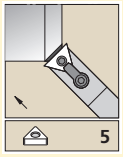


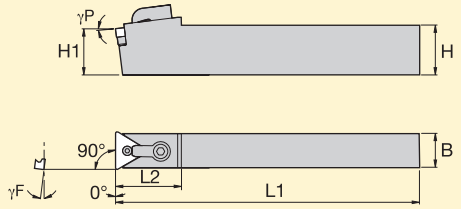
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTAN R/L 082B	.50	.50	.500	4.50	.96	-	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC9**	3/32
MTAN R/L 102B	.63	.63	.625	4.50	.96	-	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC5**	3/32
MTAN R/L 103B	.63	.63	.625	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTAN R/L 123B	.75	.75	.750	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTAN R/L 164D	1.00	1.00	1.000	6.00	1.21	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTAN R/L 205D	1.25	1.25	1.250	6.00	1.46	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTAN R/L 246E	1.50	1.50	1.500	7.00	1.50	-	-	-5.0	-5.0	**TN..663**	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32
								λS°	γO°							
MTAN R/L S123	.75	.75	.750	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTAN R/L S163	1.00	1.00	1.000	6.00	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTAN R/L S164	1.00	1.00	1.000	6.00	1.21	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTAN R/L S854	1.25	1.00	1.000	6.00	1.21	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTAN R/L S855	1.25	1.00	1.000	6.00	1.46	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTAN R/L S205	1.25	1.25	1.250	6.00	1.46	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32

Order example:
Right hand: **MSSNR083B**

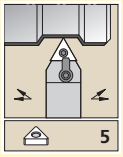
Left hand: **MSSNL083B**

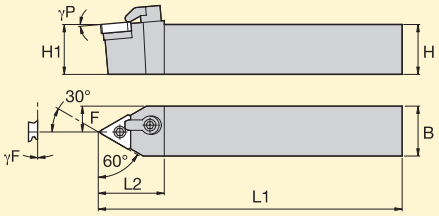
MTCN 0°





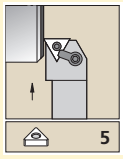
MTEN-S 30°

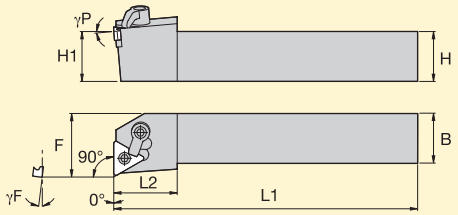




Catalog number	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTCNN083	.50	.50	-	4.50	1.13	-	-	0.0	-7.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
MTCNN443	1.00	.50	-	8.00	1.13	-	-	0.0	-7.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
MTCNN124	.75	.75	-	6.00	1.43	-	-	0.0	-7.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK12**	**STC4**	5/32
MTCNN644	1.00	.75	-	8.00	1.43	-	-	0.0	-7.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK12**	**STC4**	5/32
								γF°	γP°							
MTENNS082	.50	.50	.250	4.50	.99	-	-	0.0	-10.0	**TN..221**	**-**	**KL23**	1/16	**CK6**	**STC5**	3/32
MTENNS103	.63	.63	.312	4.50	1.16	-	-	0.0	-10.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS123	.75	.75	.375	4.50	1.16	-	-	0.0	-10.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS163	1.00	1.00	.500	5.00	1.16	-	-	0.0	-10.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS164	1.00	1.00	.500	6.00	1.50	-	-	0.0	-10.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTENNS854	1.25	1.00	.500	6.00	1.41	-	-	0.0	-10.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTENNS205	1.25	1.25	.625	6.00	1.64	-	-	0.0	-10.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTENNS246	1.50	1.50	.750	7.00	1.95	-	-	0.0	-10.0	**TN..663**	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32

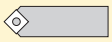
MTFN 0°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTFN R/L 082B	.50	.50	.750	4.50	.82	-	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC9**	3/32
MTFN R/L 102B	.63	.63	.875	4.50	.82	-	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC9**	3/32
MTFN R/L 122B	.75	.75	1.000	4.50	.82	-	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC9**	3/32
MTFN R/L 103B	.63	.63	.875	4.50	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L 123A	.75	.75	1.000	4.00	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L 123B	.75	.75	1.000	4.50	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L 163C	1.00	1.00	1.250	5.00	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L 163D	1.00	1.00	1.250	6.00	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L 124B	.75	.75	1.000	4.50	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFN R/L 164C	1.00	1.00	1.250	5.00	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFN R/L 164D	1.00	1.00	1.250	6.00	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFN R/L 854D	1.25	1.00	1.250	6.00	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFN R/L 204D	1.25	1.25	1.500	6.00	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFN R/L 165D	1.00	1.00	1.250	6.00	1.38	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFN R/L 205D	1.25	1.25	1.500	6.00	1.43	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFN R/L 245D	1.50	1.50	2.000	6.00	1.43	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFN R/L 246E	1.50	1.50	2.000	7.00	1.49	-	-	-5.0	-5.0	**TN..663**	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32

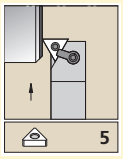
Order example:
MTCNN083

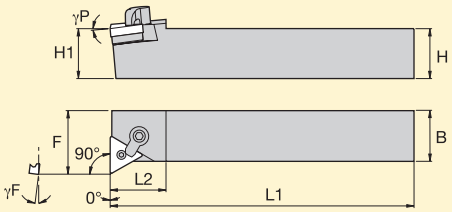


KENLOC Toolholders

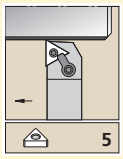
KENLOC Inserts

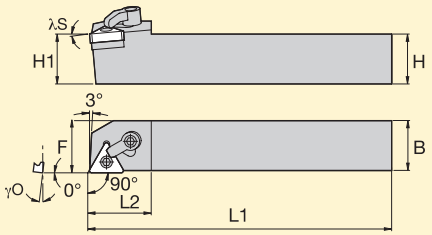
MTFN-S 0°





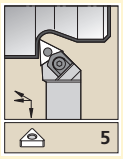
MTGN 0°

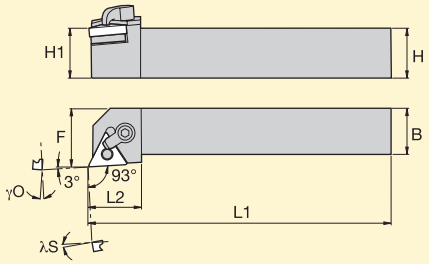




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTFN R/L S123	.75	.75	1.000	4.50	.94	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFN R/L S164	1.00	1.00	1.250	6.00	1.22	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
								λS°	γO°							
MTGN R/L 082B	.50	.50	.625	4.50	.96	-	-	-5.0	-5.0	**TN..221**	-	**KL23**	1/16	**CK19**	**STC9**	3/32
MTGN R/L 102B	.63	.63	.750	4.50	.96	-	-	-5.0	-5.0	**TN..221**	-	**KL23**	1/16	**CK19**	**STC5**	3/32
MTGN R/L 103B	.63	.63	.875	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGN R/L 123A	.75	.75	1.000	4.00	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGN R/L 123B	.75	.75	1.000	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGN R/L 163C	1.00	1.00	1.250	5.00	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGN R/L 163D	1.00	1.00	1.250	6.00	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGN R/L 124B	.75	.75	1.000	4.50	1.20	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGN R/L 164C	1.00	1.00	1.250	5.00	1.20	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGN R/L 164D	1.00	1.00	1.250	6.00	1.20	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGN R/L 204D	1.25	1.25	1.500	6.00	1.20	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGN R/L 165C	1.00	1.00	1.250	5.00	1.38	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTGN R/L 165D	1.00	1.00	1.250	6.00	1.38	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTGN R/L 205D	1.25	1.25	1.500	6.00	1.44	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTGN R/L 246E	1.50	1.50	2.000	7.00	1.50	-	-	-5.0	-5.0	**TN..663**	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32

MTJN -3°

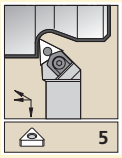


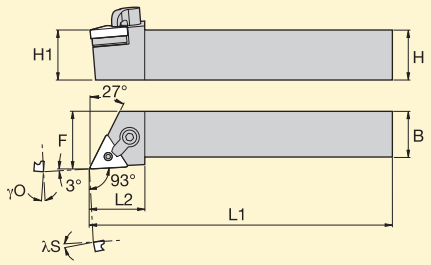


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTJN R/L 082B	.50	.50	.625	4.50	.72	-	-	-5.0	-5.0	**TN..221**	-	**KL23**	1/16	**CK19**	**STC9**	3/32
MTJN R/L 162D	1.00	1.00	1.250	6.00	.72	-	-	-5.0	-5.0	**TN..221**	-	**KL23**	1/16	**CK19**	**STC9**	3/32
MTJN R/L 103B	.63	.63	.875	4.50	.88	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L 123B	.75	.75	1.000	4.50	.88	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L 163C	1.00	1.00	1.250	5.00	.88	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L 163D	1.00	1.00	1.250	6.00	.88	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L 124B	.75	.75	1.000	4.50	1.12	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L 164D	1.00	1.00	1.250	6.00	1.12	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L 204D	1.25	1.25	1.500	6.00	1.12	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L 205D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32

Order example:
Right hand: **MTFNRS123**
Left hand: **MTFNLS123**

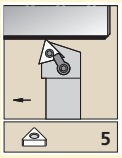
MTJN-S -3°

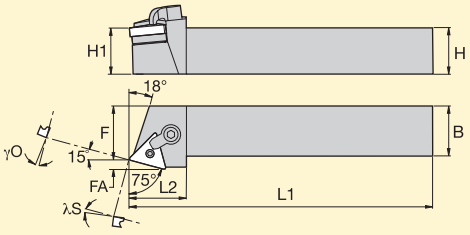




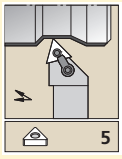
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTJN R/L S123	.75	.75	1.000	4.50	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L S163	1.00	1.00	1.250	6.00	1.12	-	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJN R/L S124	.75	.75	1.000	4.50	1.19	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L S164	1.00	1.00	1.250	6.00	1.19	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L S854	1.25	1.00	1.250	6.00	1.19	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L S864	1.50	1.00	1.250	6.00	1.19	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L S204	1.25	1.25	1.250	6.00	1.19	-	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJN R/L S165	1.00	1.00	1.250	6.00	1.44	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJN R/L S865	1.50	1.00	1.250	6.00	1.44	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJN R/L S205	1.25	1.25	1.500	6.00	1.44	-	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJN R/L S246	1.50	1.50	2.000	7.00	1.62	-	-	-5.0	-5.0	**TN..663**	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32

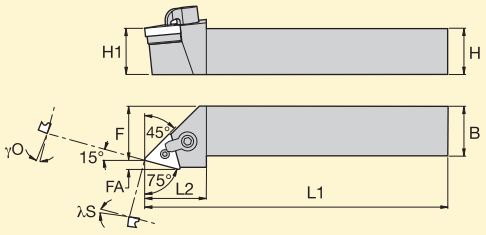
MTRN 15°





MTRN-S 15°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MTRN R/L 082B	.50	.50	.647	4.50	1.02	.10	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC9**	3/32
MTRN R/L 102B	.63	.63	.772	4.50	1.02	.10	-	-5.0	-5.0	**TN..221**	**-**	**KL23**	1/16	**CK19**	**STC5**	3/32
MTRN R/L 103B	.63	.63	.722	4.50	1.20	.15	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK20**	**STC35**	1/8
MTRN R/L 123B	.75	.75	.847	4.50	1.20	.15	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK20**	**STC20**	1/8
MTRN R/L 163D	1.00	1.00	1.097	6.00	1.20	.15	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK20**	**STC20**	1/8
MTRN R/L 164D	1.00	1.00	1.040	6.00	1.24	.20	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTRN R/L 245E	1.50	1.50	1.740	7.00	1.62	.25	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
								λS°	γO°							
MTRN R/L S123	.75	.75	.847	4.50	1.20	.15	-	-5.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTRN R/L S164	1.00	1.00	1.040	6.00	1.24	.20	-	-5.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTRN R/L S205	1.25	1.25	1.240	6.00	1.62	.25	-	-5.0	-5.0	**TN..543**	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32

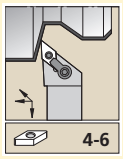
Order example:
Right hand: **MTJNRS123**

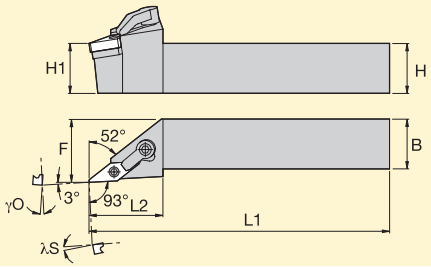
Left hand: **MTJNLS123**

KENLOC Toolholders

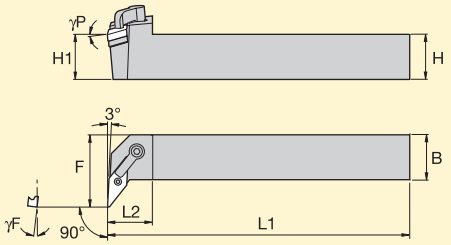
KENLOC Inserts

MVJN -3°



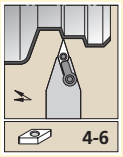


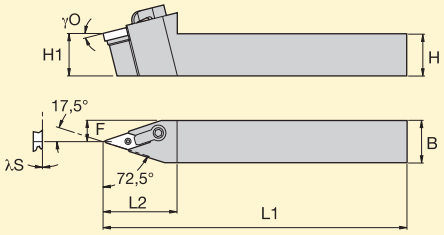
MVUN -3°



Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MVJN R/L 123A	.75	.75	1.000	4.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 123B	.75	.75	1.000	4.50	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 163C	1.00	1.00	1.250	5.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 163D	1.00	1.00	1.250	6.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 853D	1.25	1.00	1.250	6.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 203D	1.25	1.25	1.500	6.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 243D	1.50	1.50	2.000	6.00	1.66	-	-	-9.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJN R/L 124B	.75	.75	1.000	4.50	2.00	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJN R/L 164C	1.00	1.00	1.250	5.00	2.00	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJN R/L 164D	1.00	1.00	1.250	6.00	2.00	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJN R/L 204D	1.25	1.25	1.500	6.00	2.00	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJN R/L 244D	1.50	1.50	2.000	6.00	2.00	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
								γF°	γP°							
MVUN R/L 204C	1.25	1.25	2.000	5.00	1.25	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUN R/L 204D	1.25	1.25	2.000	6.00	1.25	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUN R/L 244D	1.50	1.50	2.250	6.00	1.25	-	-	-9.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32

MVVN 17.5°



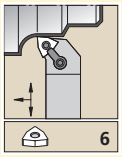


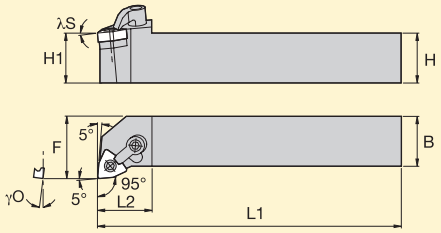
Catalog number	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MVVNN123B	.75	.75	.375	4.50	1.77	-	-	0.0	-14.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN163C	1.00	1.00	.500	5.00	1.77	-	-	0.0	-14.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN163D	1.00	1.00	.500	6.00	1.77	-	-	0.0	-14.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN853D	1.25	1.00	.500	6.00	1.77	-	-	0.0	-14.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN203D	1.25	1.25	.625	6.00	1.77	-	-	0.0	-14.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN164D	1.00	1.00	.500	6.00	2.25	-	-	0.0	-14.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVVNN204D	1.25	1.25	.625	6.00	2.25	-	-	0.0	-14.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVVNN244E	1.50	1.50	.750	7.00	2.25	-	-	0.0	-14.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32

Order example:
Right hand: **MVJNR123A**

Left hand: **MVJNL123A**

MWLN -5°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MWLN R/L 123B	.75	.75	1.000	4.50	1.00	-	-	-5.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLN R/L 163C	1.00	1.00	1.250	5.00	1.00	-	-	-5.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLN R/L 163D	1.00	1.00	1.250	6.00	1.00	-	-	-5.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLN R/L 203D	1.25	1.25	1.500	6.00	1.00	-	-	-5.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLN R/L 243D	1.50	1.50	2.000	6.00	1.00	-	-	-5.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLN R/L 124B	.75	.75	1.000	4.50	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
MWLN R/L 164C	1.00	1.00	1.250	5.00	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLN R/L 164D	1.00	1.00	1.250	6.00	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLN R/L 854D	1.25	1.00	1.250	6.00	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLN R/L 204D	1.25	1.25	1.500	6.00	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLN R/L 244D	1.50	1.50	2.000	6.00	1.13	-	-	-5.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32

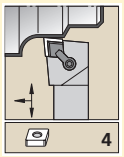
Order example:
Right hand: **MWLNR123B**

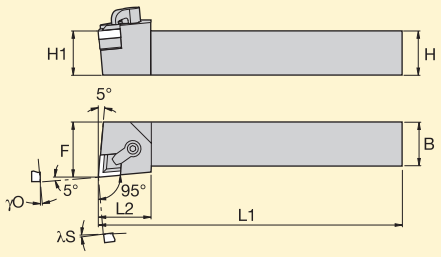
Left hand: **MWLNL123B**

KENLOC Toolholders

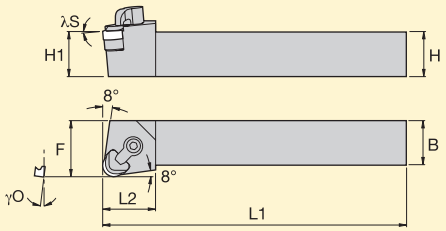
KENLOC Ceramic Inserts

MCLN-C -5°



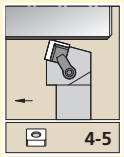


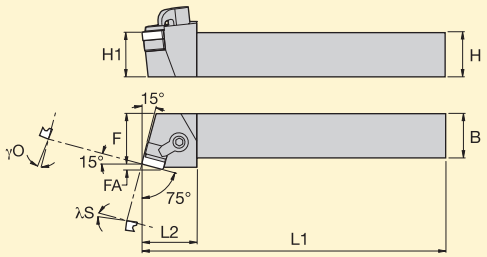
MRGN-C



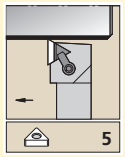
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MCLN R/L C164C	1.00	1.00	1.250	5.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MCLN R/L C164D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MCLN R/L C204D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MCLN R/L C244D	1.50	1.50	2.000	6.00	1.25	-	-	-5.0	-5.0	**CN..432**	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
								λS°	γO°							
MRGN R/L C164D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGN R/L C204D	1.25	1.25	1.500	6.00	1.25	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGN R/L C244D	1.50	1.50	2.000	6.00	1.25	-	-	-5.0	-5.0	**RN..43**	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8

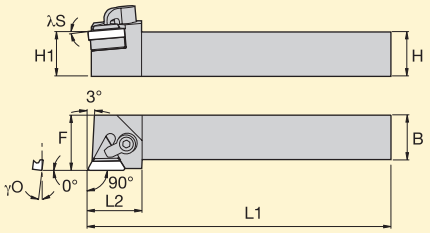
MSRN-C 15°





MTGN-C 0°

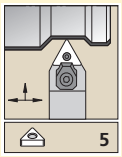


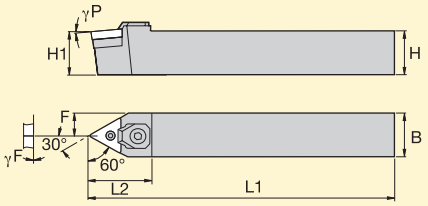


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
MSRN R/L C164D	1.00	1.00	1.130	6.00	1.25	.12	-	-5.0	-5.0	**SN..432**	**ISSN422**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MSRN R/L C204D	1.25	1.25	1.380	6.00	1.25	.12	-	-5.0	-5.0	**SN..432**	**ISSN422**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MSRN R/L C244D	1.50	1.50	1.880	6.00	1.25	.12	-	-5.0	-5.0	**SN..432**	**ISSN422**	**KL46L**	3/32	**CK21**	**STC20**	1/8
								λS°	γO°							
MTGN R/L C164D	1.00	1.00	1.250	6.00	1.25	-	-	-5.0	-5.0	**TN..432**	**ITSN423**	**KL46L**	3/32	**CK9**	**STC4**	5/32

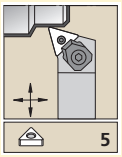
Order example:
Right hand: **MCLNRC164C**
Left hand: **MCLNLC164C**

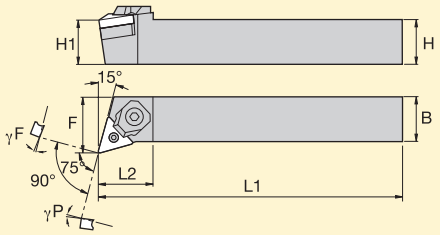
WTEN 30°





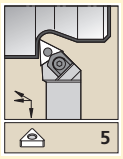
WTIN -15°

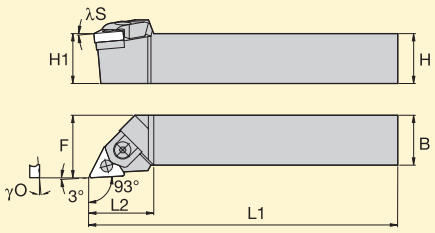




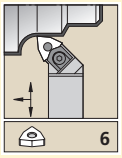
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Retaining Ring	Clamp Screw	Hex (inch)
WTENNS164	1.00	1.00	.500	6.00	1.38	0.0	-10.0	**TN..432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
WTENNS854	1.25	1.00	.500	6.00	1.38	0.0	-10.0	**TN..432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
WTENNS205	1.25	1.25	.625	6.00	1.63	0.0	-10.0	**TN..543**	**SM370**	**FPE6**	3/32	**WC6**	**RA31**	**S987**	3/16
						γF°	γP°								
WTIN R/L S164	1.00	1.00	1.250	6.00	1.25	-7.0	-7.0	**TN..432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
WTIN R/L S204	1.25	1.25	1.500	6.00	1.25	-7.0	-7.0	**TN..432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
WTIN R/L S205	1.25	1.25	1.500	6.00	1.50	-7.0	-7.0	**TN..543**	**SM370**	**FPE6**	3/32	**WC6**	**RA31**	**S987**	3/16

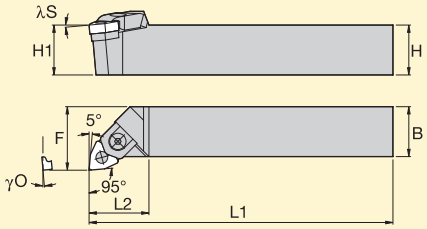
WTJN -3°





WWLN -5°





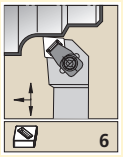
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Retaining Ring	Clamp Screw	Hex (inch)
WTJN R/L S164	1.00	1.00	1.250	6.00	1.38	-5.0	-5.0	**TNMG-432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
WTJN R/L S854	1.25	1.00	1.250	6.00	1.38	-5.0	-5.0	**TNMG-432**	**SM391**	**FPE5**	1/16	**WC5**	**RA21**	**S986**	5/32
						λS°	γO°				Torx				Torx
WWLN R/L 124	.75	.75	1.000	4.50	1.25	-5.0	-5.0	**WNMG-432**	**SM443**	**FP453**	T10	**MWW4**	-	**MS1372**	T25
WWLN R/L 164	1.00	1.00	1.250	6.00	1.25	-5.0	-5.0	**WNMG-432**	**SM443**	**FP477**	T10	**MWW4**	-	**MS1372**	T25
WWLN R/L 854	1.25	1.00	1.250	6.00	1.25	-5.0	-5.0	**WNMG-432**	**SM443**	**FP477**	T10	**MWW4**	-	**MS1372**	T25

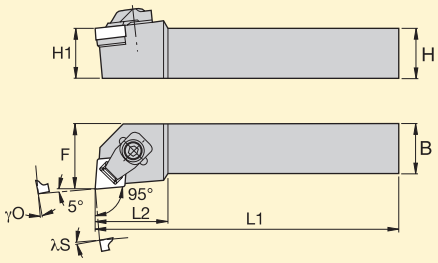
Order example:
WTENNS164

TOP NOTCH TURNING Toolholders

KENDEX negative Inserts

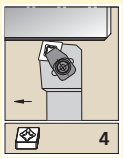
CCLN-MX -5°

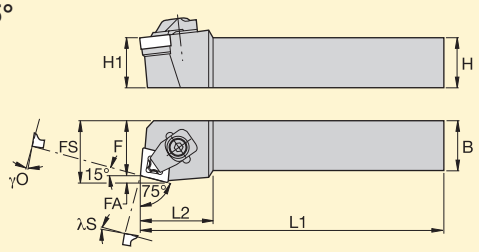




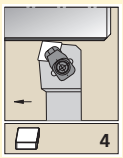
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CCLN R/L 164DMX5	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
CCLN R/L 204DMX5	1.25	1.25	1.500	6.00	1.25	-	-	-	-5.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
CCLN R/L 244DMX5	1.50	1.50	2.000	6.00	1.25	-	-	-	-5.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
CCLN R/L 165DMX5	1.00	1.00	1.250	6.00	1.37	-	-	-	-5.0	-5.0	**CN.X553**	**552.223**	**554.261**	T25	**551.342**	T25
CCLN R/L 205DMX5	1.25	1.25	1.500	6.00	1.37	-	-	-	-5.0	-5.0	**CN.X553**	**552.223**	**554.261**	T25	**551.342**	T25
CCLN R/L 245DMX5	1.50	1.50	2.000	6.00	1.38	-	-	-	-5.0	-5.0	**CN.X553**	**552.223**	**554.261**	T25	**551.342**	T25

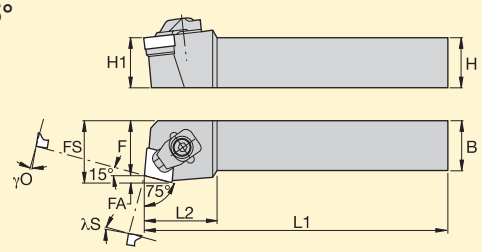
CCRN-MX 15°





CCRN-MN 15°



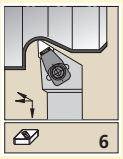


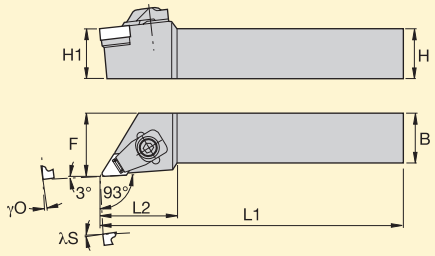
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CCRN R/L 165DMX5	1.00	1.00	1.250	6.00	1.38	1.40	.15	-	-5.0	-5.0	**CN.X553**	**552.223**	**554.261**	T25	**551.326**	T25
CCRN R/L 205DMX5	1.25	1.25	1.500	6.00	1.38	1.65	.15	-	-5.0	-5.0	**CN.X553**	**552.223**	**554.261**	T25	**551.326**	T25
CCRN R/L 164DMN5	1.00	1.00	1.250	6.00	1.24	1.37	.12	-	-5.0	-5.0	**CN.N452**	**552.221**	**554.260**	T20	**551.327**	T25
CCRN R/L 204DMN5	1.25	1.25	1.500	6.00	1.24	1.62	.12	-	-5.0	-5.0	**CN.N452**	**552.221**	**554.260**	T20	**551.327**	T25

Order example:
Right hand: **CCLNR164DMX5**

Left hand: **CCLNL164DMX5**

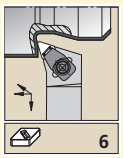
CDJN-MX -3°

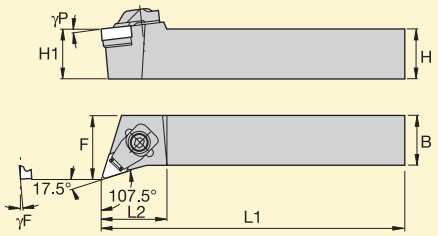




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CDJN R/L 1612DMX5	1.00	1.00	1.250	6.00	1.50	-	-	-	-5.0	-5.0	**DN.X120708**	**552.225**	**554.262**	T20	**551.326**	T25
CDJN R/L 164DMX5	1.00	1.00	1.250	6.00	1.50	-	-	-	-5.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25
CDJN R/L 204DMX5	1.25	1.25	1.500	6.00	1.50	-	-	-	-5.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25

CDQN-MX -17.5°





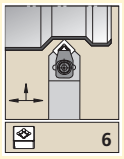
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	γP°	γF°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CDQN R/L 164DMX5	1.00	1.00	1.250	6.00	1.38	-	-	-	-5.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25
CDQN R/L 204DMX5	1.25	1.25	1.500	6.00	1.38	-	-	-	-5.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25
CDQN R/L 244DMX5	1.50	1.50	2.000	6.00	1.38	-	-	-	-5.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25

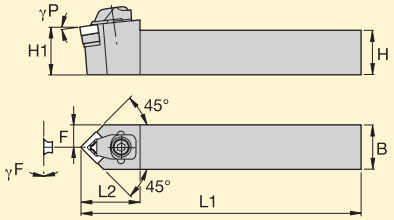
Order example:
Right hand: **CDJNR1612DMX5**
Left hand: **CDJNL1612DMX5**

TOP NOTCH TURNING Toolholders

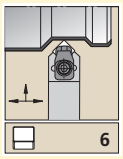
KENDEX negative Inserts

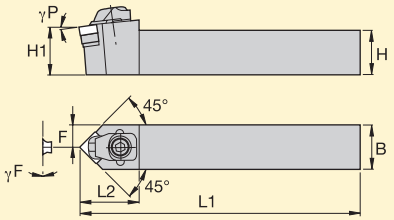
CSDN-MX 45°





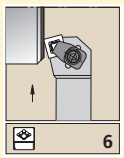
CSDN-MN 45°

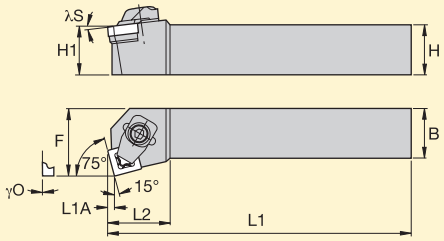




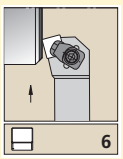
Catalog number	H = H1	B	F	L1	L2	FS	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CSDNN164DMX5	1.00	1.00	.500	6.00	1.38	-	-	-	0.0	-7.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSDNN204DMX5	1.25	1.25	.625	6.00	1.38	-	-	-	0.0	-7.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSDNN244DMX5	1.50	1.50	.750	6.00	1.38	-	-	-	0.0	-7.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
									γF°	γP°						
CSDNN164DMN5	1.00	1.00	.500	6.00	1.38	-	-	-	0.0	-7.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25
CSDNN204DMN5	1.25	1.25	.625	6.00	1.38	-	-	-	0.0	-7.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25
CSDNN244DMN5	1.50	1.50	.750	6.00	1.38	-	-	-	0.0	-7.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25

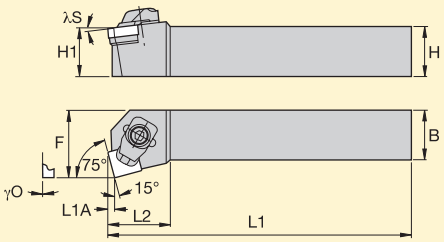
CSKN-MX 15°





CSKN-MN 15°

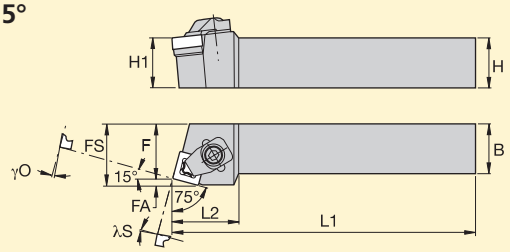




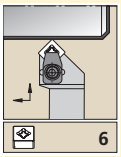
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CSKN R/L 164DMX5	1.00	1.00	1.250	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSKN R/L 204DMX5	1.25	1.25	1.500	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSKN R/L 244DMX5	1.50	1.50	2.000	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSKN R/L 165DMX5	1.00	1.00	1.250	6.00	1.25	-	-	.15	-5.0	-5.0	**SN.X553**	**552.234**	**554.261**	T25	**551.326**	T25
									λS°	γO°						
CSKN R/L 164DMN5	1.00	1.00	1.250	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25
CSKN R/L 204DMN5	1.25	1.25	1.500	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25
CSKN R/L 244DMN5	1.50	1.50	2.000	6.00	1.06	-	-	.12	-5.0	-5.0	**SN.N452**	**552.232**	**554.260**	T20	**551.327**	T25

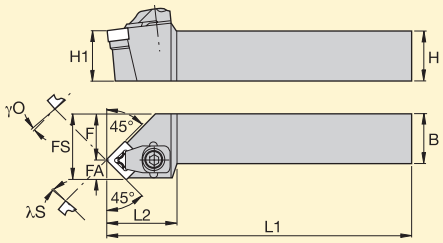
Order example:
CSDNN164DMX5

CSRN-MX 15°



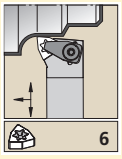
CSSN-MX 45°

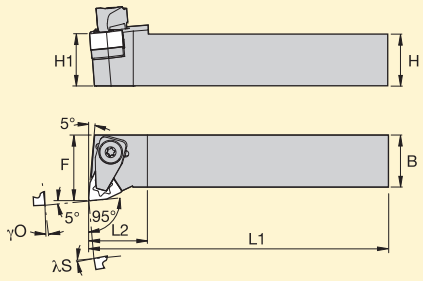




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CSRN R/L 164DMX5	1.00	1.00	1.130	6.00	1.25	1.25	.12	-	-5.0	-5.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSRN R/L 204DMX5	1.25	1.25	1.380	6.00	1.38	1.50	.12	-	-5.0	-5.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
CSRN R/L 165DMX5	1.00	1.00	1.130	6.00	1.34	1.28	.15	-	-5.0	-5.0	**SN.X553**	**552.234**	**554.261**	T25	**551.326**	T25
									λS°	γO°						
CSSN R/L 165DMX5	1.00	1.00	.720	6.00	1.38	1.12	.42	-	-5.0	-5.0	**SN.X553**	**552.234**	**554.261**	T25	**551.326**	T25

CWLN-MX -5°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	FS	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
CWLN R/L 164DMX5	1.00	1.00	1.250	6.00	1.12	-	-	-	-5.0	-5.0	**WN.X452**	**552.210**	**554.260**	T20	**551.326**	T25
CWLN R/L 204DMX5	1.25	1.25	1.500	6.00	1.12	-	-	-	-5.0	-5.0	**WN.X452**	**552.210**	**554.260**	T20	**551.326**	T25

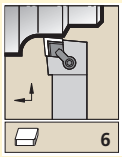
Order example:
Right hand: **CSRNR164DMX5**

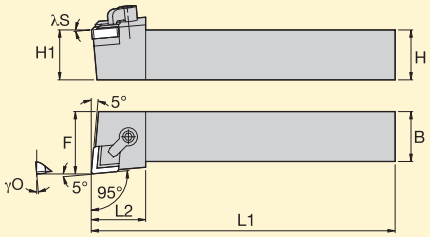
Left hand: **CSRNL164DMX5**

KENDEX Toolholders

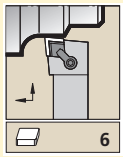
KENDEX negative Inserts

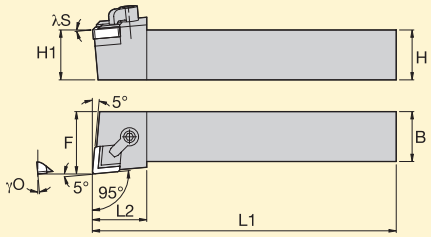
CCLN -5°





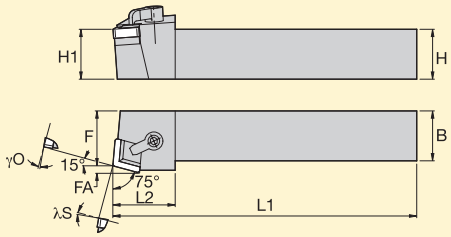
CCLN-P -5°



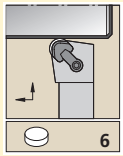


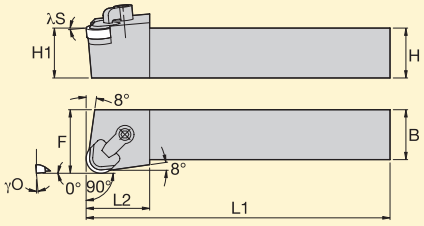
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CCLN R/L 124	.75	.75	1.000	4.50	1.00	-	-	-	-5.0	-5.0	**CN..422**	**SM396**	**S111**	1/16	**CK21**	**STC20**	1/8
CCLN R/L 164	1.00	1.00	1.250	6.00	1.00	-	-	-	-5.0	-5.0	**CN..422**	**SM396**	**S111**	1/16	**CK21**	**STC20**	1/8
CCLN R/L 854	1.25	1.00	1.250	6.00	1.00	-	-	-	-5.0	-5.0	**CN..422**	**SM396**	**S111**	1/16	**CK21**	**STC20**	1/8
CCLN R/L 206	1.25	1.25	1.500	8.00	1.44	-	-	-	-5.0	-5.0	**CN..633**	**SM219**	**S125**	3/32	**CK12**	**STC4**	5/32
									λS°	γO°							
CCLN R/L P123B	.75	.75	1.000	4.50	1.00	-	-	-	-5.0	-5.0	**CN..322**	**SM432**	**SL344**	-	**CK20**	**STC11**	1/8
CCLN R/L P163D	1.00	1.00	1.250	6.00	1.25	-	-	-	-5.0	-5.0	**CN..322**	**SM432**	**SL344**	-	**CK20**	**STC11**	1/8

CCRN-P 15°



CRGN



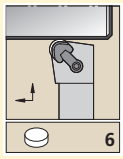


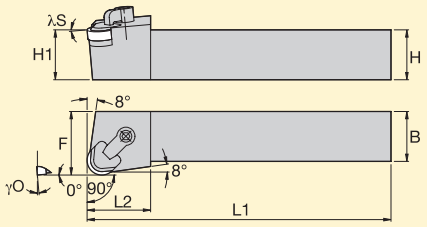
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CCRN R/L P163D	1.00	1.00	1.161	6.00	1.25	-	.09	-	-5.0	-5.0	**CN..322**	**SM432**	**SL344**	-	**CK20**	**STC11**	1/8
									λS°	γO°							
CRGN R/L 123	.75	.75	.875	4.50	.75	-	-	-	-5.0	-5.0	**RN..32**	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGN R/L 163	1.00	1.00	1.125	6.00	.75	-	-	-	-5.0	-5.0	**RN..32**	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGN R/L 164	1.00	1.00	1.125	6.00	1.00	-	-	-	-5.0	-5.0	**RN..42**	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGN R/L 854	1.25	1.00	1.125	6.00	1.00	-	-	-	-5.0	-5.0	**RN..42**	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGN R/L 864	1.50	1.00	1.125	8.00	1.00	-	-	-	-5.0	-5.0	**RN..42**	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32

Order example:
Right hand: **CCLNR124**

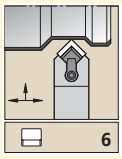
Left hand: **CCLNL124**

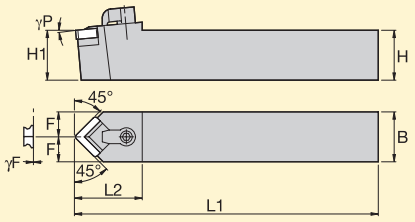
CRGN-P





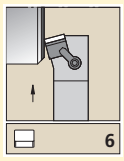
CSDN 45°

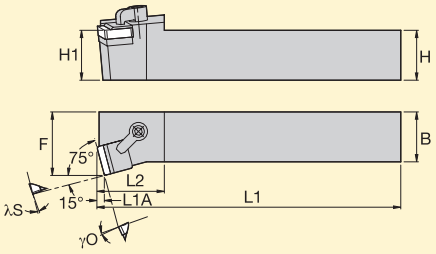




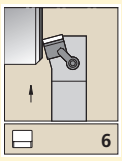
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CRGN R/L P163D	1.00	1.00	1.250	6.00	.75	-	-	-	-5.0	-5.0	**RN..32**	**SM434**	**SL344**	-	**CK6**	**STC5**	3/32
CRGN R/L P164D	1.00	1.00	1.250	6.00	1.13	-	-	-	-5.0	-5.0	**RN..42**	**SM437**	**SL344**	-	**CK28**	**STC4**	5/32
CRGN R/L P204D	1.25	1.25	1.500	6.00	1.13	-	-	-	-5.0	-5.0	**RN..42**	**SM437**	**SL344**	-	**CK28**	**STC4**	5/32
									γF°	γP°							
CSDNN083	.50	.50	.250	4.50	1.00	-	-	-	0.0	-7.0	**SN..322**	**SM87**	**SL344**	-	**CK7**	**STC5**	3/32
CSDNN103	.63	.63	.312	4.50	1.00	-	-	-	0.0	-7.0	**SN..322**	**SM87**	**SL344**	-	**CK7**	**STC5**	3/32
CSDNN124	.75	.75	.375	4.50	1.31	-	-	-	0.0	-7.0	**SN..422**	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSDNN644	1.00	.75	.375	6.00	1.31	-	-	-	0.0	-7.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDNN654	1.25	.75	.375	6.00	1.31	-	-	-	0.0	-7.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDNN164	1.00	1.00	.500	6.00	1.31	-	-	-	0.0	-7.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDNN866	1.50	1.00	.500	8.00	1.75	-	-	-	0.0	-7.0	**SN..633**	**SM216**	**S125**	3/32	**CK24**	**STC19**	3/16

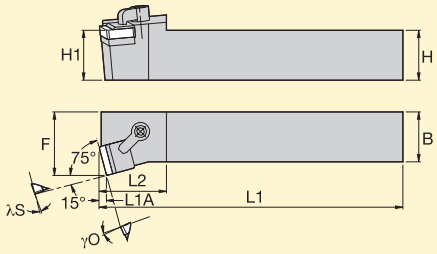
CSKN 15°





CSKN-P 15°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CSKN R/L 123	.75	.75	.830	4.50	.88	-	-	.09	-5.0	-5.0	**SN..322**	**SM87**	**SL344**	-	**CK7**	**STC5**	3/32
CSKN R/L 164	1.00	1.00	1.120	6.00	1.13	-	-	.12	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSKN R/L 854	1.25	1.00	1.120	6.00	1.13	-	-	.12	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSKN R/L 856	1.25	1.00	1.190	6.00	1.50	-	-	.18	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
CSKNR866	1.50	1.00	1.190	8.00	1.50	-	-	.18	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CSKN R/L P164D	1.00	1.00	1.250	6.00	1.38	-	-	.12	-5.0	-5.0	**SN..422**	**SM435**	**SL344**	-	**CK28**	**STC4**	5/32

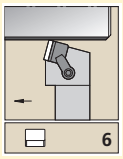
Order example:
Right hand: **CRGNRP163D**

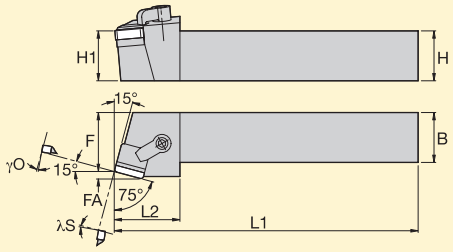
Left hand: **CRGNLP163D**

KENDEX Toolholders

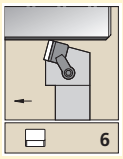
KENDEX negative Inserts

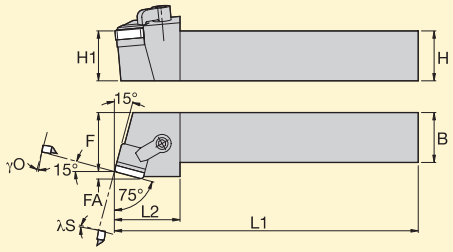
CSRN 15°





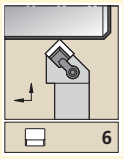
CSRN-P 15°

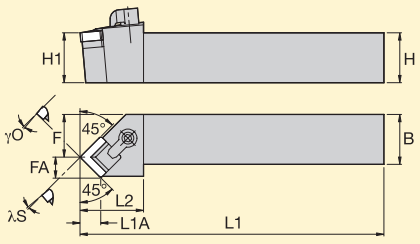




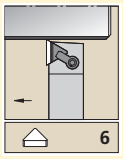
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CSRNR123	.75	.75	.660	4.50	.94	-	.09	-	-5.0	-5.0	**SN..322**	**SM87**	**SL344**	-	**CK7**	**STC5**	3/32
CSRN R/L 104	.63	.63	.630	4.50	1.19	-	.12	-	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSRN R/L 124	.75	.75	.630	4.50	1.19	-	.12	-	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSRN R/L 164	1.00	1.00	.880	6.00	1.19	-	.12	-	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRN R/L 854	1.25	1.00	.880	6.00	1.19	-	.12	-	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRN R/L 166	1.00	1.00	1.060	6.00	1.44	-	.18	-	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRN R/L 856	1.25	1.00	1.060	6.00	1.44	-	.18	-	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRN R/L 866	1.50	1.00	1.060	8.00	1.44	-	.18	-	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRN R/L 206	1.25	1.25	1.310	6.00	1.44	-	.18	-	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CSRN R/L P164D	1.00	1.00	1.130	6.00	1.38	-	.12	-	-5.0	-5.0	**SN..422**	**SM435**	**SL344**	-	**CK28**	**STC4**	5/32

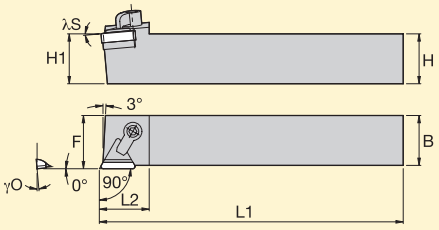
CSSN 45°





CTAN 0°

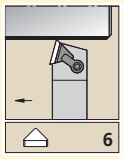


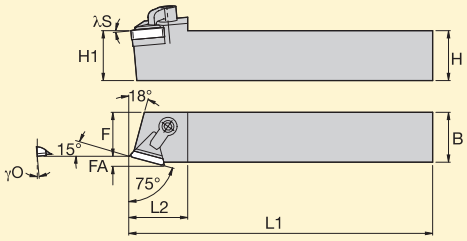


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CSSN R/L 103	.63	.63	.420	4.50	.94	-	.25	.25	-5.0	-5.0	**SN..322**	**SM87**	**SL344**	-	**CK7**	**STC5**	3/32
CSSN R/L 124	.75	.75	.470	4.50	1.31	-	.34	.33	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSSN R/L 164	1.00	1.00	.720	6.00	1.31	-	.34	.33	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSN R/L 854	1.25	1.00	.720	6.00	1.31	-	.34	.33	-5.0	-5.0	**SN..422**	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSN R/L 856	1.25	1.00	.770	6.00	1.38	-	.51	.53	-5.0	-5.0	**SN..633**	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CTAN R/L 082	.50	.50	.500	4.50	.75	-	-	-	-5.0	-5.0	**TN..221**	**SM88**	**SL344**	-	**CK19**	**STC5**	3/32
CTAN R/L 102	.63	.63	.620	4.50	.75	-	-	-	-5.0	-5.0	**TN..221**	**SM88**	**SL344**	-	**CK19**	**STC5**	3/32
CTAN R/L 123	.75	.75	.750	4.50	1.06	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTAN R/L 163	1.00	1.00	1.000	6.00	1.06	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTAN R/L 164	1.00	1.00	1.000	6.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTAN R/L 854	1.25	1.00	1.000	6.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTAN R/L 864	1.50	1.00	1.000	8.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTANR204	1.25	1.25	1.250	6.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTAN R/L 245	1.50	1.50	1.500	8.00	1.44	-	-	-	-5.0	-5.0	**TN..543**	**SM72**	**S132**	1/8	**CK24**	**STC19**	3/16

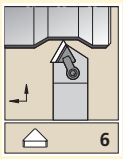
Order example:
Right hand: **CSRNR123**

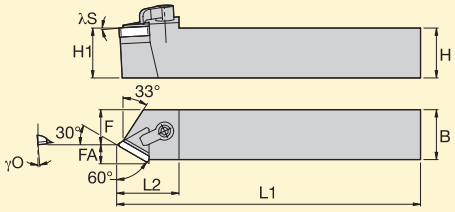
CTBN 15°





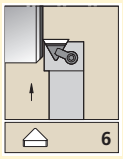
CTEN 30°

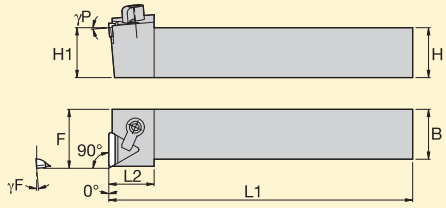




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTBNR102	.63	.63	.540	4.50	.81	-	.10	-	-5.0	-5.0	**TN..221**	**SM88**	**SL344**	-	**CK19**	**STC5**	3/32
CTBNR103	.63	.63	.600	4.50	1.19	-	.15	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTBN R/L 123	.75	.75	.600	4.50	1.19	-	.15	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTBN R/L 163	1.00	1.00	.850	6.00	1.19	-	.15	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTBN R/L 864	1.50	1.00	.790	8.00	1.25	-	.20	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTBN R/L 204	1.25	1.25	1.040	6.00	1.25	-	.20	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CTEN R/L 102	.63	.63	.450	4.50	.88	-	.20	-	-5.0	-5.0	**TN..221**	**SM88**	**SL344**	-	**CK19**	**STC5**	3/32
CTEN R/L 103	.63	.63	.460	4.50	1.25	-	.28	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTEN R/L 123	.75	.75	.460	4.50	1.25	-	.28	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTEN R/L 643	1.00	.75	.460	6.00	1.25	-	.28	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTEN R/L 163	1.00	1.00	.700	6.00	1.25	-	.28	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTEN R/L 854	1.25	1.00	.610	6.00	1.34	-	.39	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32

CTFN 0°





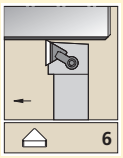
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTFN R/L 102	.63	.63	.880	4.50	.63	-	-	-	-5.0	-5.0	**TN..221**	**SM88**	**SL344**	-	**CK19**	**STC5**	3/32
CTFN R/L 103	.63	.63	1.000	4.50	.88	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTFN R/L 123	.75	.75	1.000	4.50	.88	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTFN R/L 643	1.00	.75	1.000	6.00	.88	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFN R/L 163	1.00	1.00	1.250	6.00	.88	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFN R/L 853	1.25	1.00	1.250	6.00	.88	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFN R/L 854	1.25	1.00	1.250	6.00	1.13	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFN R/L 864	1.50	1.00	1.250	8.00	1.13	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFN R/L 204	1.25	1.25	2.000	6.00	1.13	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFN R/L 865	1.50	1.00	1.250	8.00	1.44	-	-	-	-5.0	-5.0	**TN..543**	**SM72**	**S132**	1/8	**CK24**	**STC19**	3/16

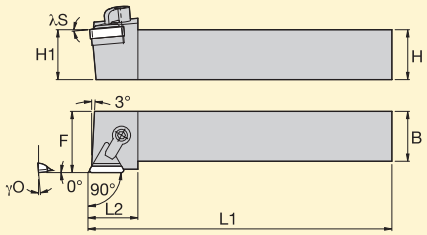
Order example:
Right hand: **CTBNR102**

KENDEX Toolholders

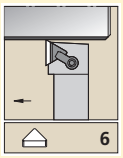
KENDEX negative Inserts

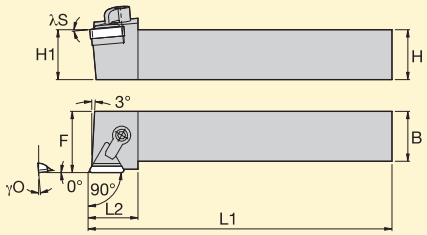
CTGN 0°





CTGN-P 0°

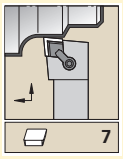


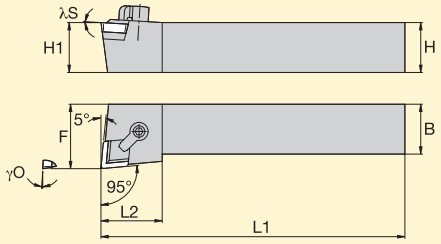


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTGN R/L 103	.63	.63	1.000	4.50	1.00	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTGN R/L 123	.75	.75	1.000	4.50	1.00	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTGN R/L 163	1.00	1.00	1.250	6.00	1.00	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGN R/L 853	1.25	1.00	1.250	6.00	1.00	-	-	-	-5.0	-5.0	**TN..322**	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGN R/L 164	1.00	1.00	1.250	6.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGN R/L 864	1.50	1.00	1.250	8.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGN R/L 204	1.25	1.25	1.500	6.00	1.19	-	-	-	-5.0	-5.0	**TN..432**	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CTGN R/L P122B	.75	.75	1.000	4.50	1.06	-	-	-	-5.0	-5.0	**TNM-221**	**SM429**	**SL342**	-	**CK19**	**STC5**	3/32

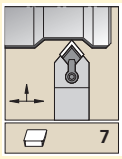
Order example:
Right hand: **CTGNR103**
Left hand: **CTGNL103**

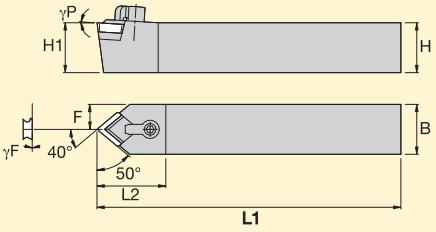
CCLP -5°





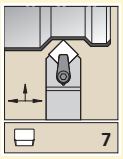
CCMP 50°

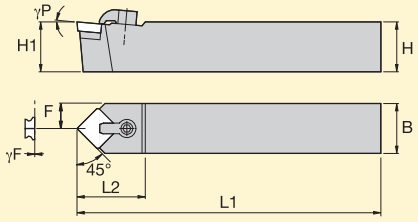




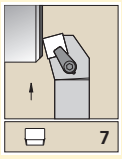
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CCLPR084V	.50	.50	.750	3.50	1.00	-	-	-	3.5	3.5	**CP..422**	**SM369**	**S19**	1/16	**CK7**	**STC9**	3/32
CCLP R/L 124B	.75	.75	1.000	4.50	1.25	-	-	-	3.5	3.5	**CP..422**	**SM369**	**S111**	1/16	**CK13**	**STC8**	5/32
CCLP R/L 164C	1.00	1.00	1.250	5.00	1.25	-	-	-	3.5	3.5	**CP..422**	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32
CCLP R/L 164D	1.00	1.00	1.250	6.00	1.25	-	-	-	3.5	3.5	**CP..422**	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32
CCLP R/L 204D	1.25	1.25	1.500	6.00	1.25	-	-	-	3.5	3.5	**CP..422**	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32
									γF°	γP°							
CCMPN124B	.75	.75	.375	4.50	1.38	-	-	-	0.0	0.0	**CP..422**	**SM369**	**S111**	1/16	**CK23**	**STC11**	1/8
CCMPN164D	1.00	1.00	.500	6.00	1.38	-	-	-	0.0	0.0	**CP..422**	**SM369**	**S111**	1/16	**CK22**	**STC20**	1/8

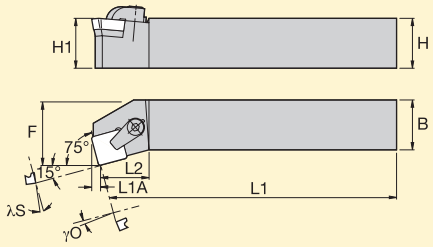
CSDP 45°





CSKP 15°





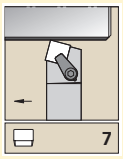
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CSDPN103	.63	.63	.312	4.50	.94	-	-	-	0.0	5.0	**SP..322**	**SM120**	**SL344**	-	**CK7**	**STC5**	3/32
CSDPN124	.75	.75	.375	4.50	1.38	-	-	-	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSDPN644	1.00	.75	.375	6.00	1.38	-	-	-	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDPN654	1.25	.75	.375	6.00	1.38	-	-	-	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDPN164	1.00	1.00	.500	6.00	1.38	-	-	-	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDPN856	1.25	1.00	.500	6.00	1.82	-	-	-	0.0	5.0	**SP..633**	**SM36**	**S125**	3/32	**CK29**	**STC19**	3/16
CSDPN866	1.50	1.00	.500	8.00	1.82	-	-	-	0.0	5.0	**SP..633**	**SM36**	**S125**	3/32	**CK29**	**STC19**	3/16
									λS°	γO°							
CSKP R/L 124B	.75	.75	1.000	4.50	1.13	-	-	.12	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSKP R/L 164D	1.00	1.00	1.250	6.00	1.13	-	-	.12	0.0	5.0	**SP..422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSKP R/L 856D	1.25	1.00	1.250	6.00	1.50	-	-	.18	0.0	5.0	**SP..633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
CSKPR866E	1.50	1.00	1.250	7.00	1.50	-	-	.18	0.0	5.0	**SP..633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32

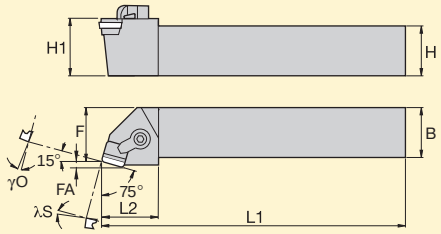
Order example:
Right hand: **CCLPR084V**

KENDEX Toolholders

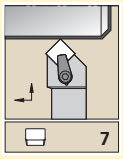
KENDEX positive Inserts

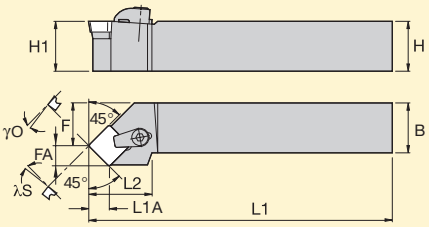
CSRP 15°





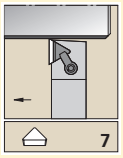
CSSP 45°

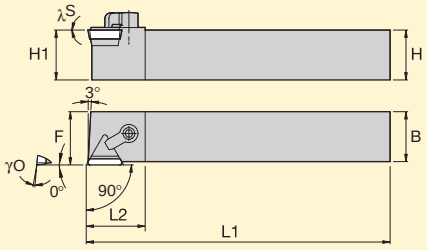




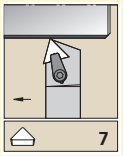
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CSRP R/L 083B	.50	.50	.440	4.50	.88	-	.09	-	0.0	5.0	**SP.322**	**SM120**	**SL344**	-	**CK7**	**STC9**	3/32
CSRP R/L 103B	.63	.63	.560	4.50	.88	-	.09	-	0.0	5.0	**SP.322**	**SM120**	**SL344**	-	**CK7**	**STC5**	3/32
CSRP R/L 124B	.75	.75	.630	4.50	1.19	-	.12	-	0.0	5.0	**SP.422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSRP R/L 164D	1.00	1.00	.880	6.00	1.19	-	.12	-	0.0	5.0	**SP.422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRP R/L 856D	1.25	1.00	1.060	6.00	1.50	-	.18	-	0.0	5.0	**SP.633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRP R/L 866E	1.50	1.00	1.060	7.00	1.50	-	.18	-	0.0	5.0	**SP.633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CSSP R/L 164D	1.00	1.00	1.170	6.00	1.44	-	.34	.35	3.5	3.5	**SP.422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSP R/L 854D	1.25	1.00	1.170	6.00	1.44	-	.34	.35	3.5	3.5	**SP.422**	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSP R/L 166D	1.00	1.00	1.020	6.00	1.50	-	.48	.53	3.5	3.5	**SP.633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
CSSP R/L 856D	1.25	1.00	1.020	6.00	1.50	-	.48	.53	3.5	3.5	**SP.633**	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32

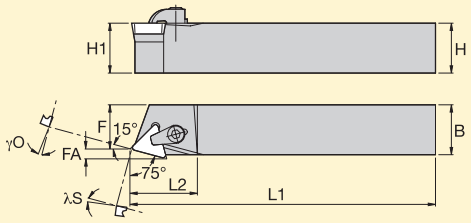
CTAP 0°





CTBP 15°

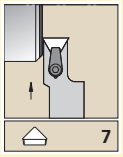


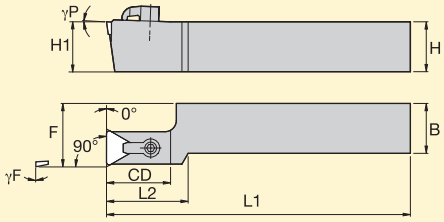


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTAP R/L 082B	.50	.50	.500	4.50	.75	-	-	-	0.0	5.0	**TP.221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTAP R/L 102B	.63	.63	.625	4.50	.75	-	-	-	0.0	5.0	**TP.221**	**SM119**	**SL344**	-	**CK19**	**STC5**	3/32
CTAP R/L 123B	.75	.75	.750	4.50	1.06	-	-	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTAP R/L 163D	1.00	1.00	1.000	6.00	1.06	-	-	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTAP R/L 854D	1.25	1.00	1.000	6.00	1.13	-	-	-	0.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTAP R/L 864E	1.50	1.00	1.000	7.00	1.13	-	-	-	0.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
									λS°	γO°							
CTBP R/L 102B	.63	.63	.540	4.50	.81	-	.10	-	0.0	5.0	**TP.221**	**SM119**	**SL344**	-	**CK19**	**STC5**	3/32
CTBP R/L 123B	.75	.75	.600	4.50	1.19	-	.15	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTBP R/L 163D	1.00	1.00	.850	6.00	1.19	-	.15	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTBP R/L 854D	1.25	1.00	.790	6.00	1.25	-	.20	-	0.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32

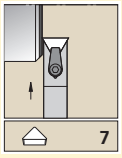
Order example:
Right hand: **CSRPR083B**
Left hand: **CSRPL083B**

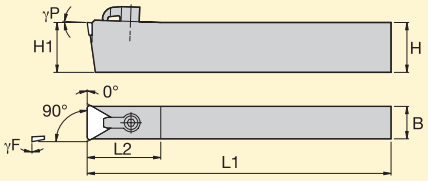
CTCP 0°





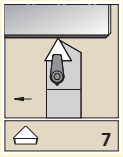
CTCPN 0°

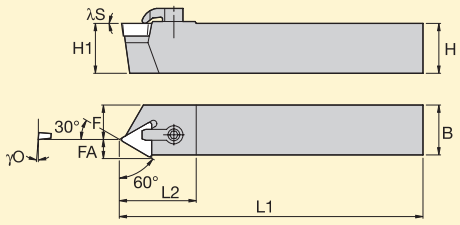




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTCPR123A	.75	.75	1.000	4.00	1.50	1.25	-	-	0.0	3.0	**TP.322**	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCP R/L 123B	.75	.75	1.000	4.50	1.50	1.25	-	-	0.0	3.0	**TP.322**	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCP R/L 163C	1.00	1.00	1.250	5.00	1.50	1.25	-	-	0.0	3.0	**TP.322**	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCP R/L 164C	1.00	1.00	1.250	5.00	1.63	1.38	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCP R/L 164D	1.00	1.00	1.250	6.00	1.63	1.38	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCP R/L 854D	1.25	1.00	1.250	6.00	1.63	1.38	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCP R/L 204D	1.25	1.25	1.500	6.00	1.63	1.38	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCP R/L 244D	1.50	1.50	2.000	6.00	3.00	1.38	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCP R/L 205D	1.25	1.25	1.500	6.00	1.75	1.38	-	-	0.0	3.0	**TP.543**	**SM99**	**S132**	1/8	**CK29**	**STC19**	3/16
									γF°	γP°							
CTCPN443	1.00	.50	-	8.00	1.19	-	-	-	0.0	3.0	**TP.322**	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPN124	.75	.75	-	6.00	1.31	-	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC8**	5/32
CTCPN644	1.00	.75	-	8.00	1.31	-	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPN664	1.50	.75	-	8.00	1.31	-	-	-	0.0	3.0	**TP.432**	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32

CTEP 30°





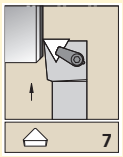
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTEP R/L 102B	.63	.63	.450	4.50	.88	-	.20	-	0.0	5.0	**TP.221**	**SM119**	**SL344**	-	**CK19**	**STC5**	3/32
CTEP R/L 123B	.75	.75	.460	4.50	1.25	-	.28	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTEP R/L 163D	1.00	1.00	.700	6.00	1.25	-	.28	-	0.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTEP R/L 854D	1.25	1.00	.610	6.00	1.31	-	.39	-	0.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTEP R/L 864E	1.50	1.00	.610	7.00	1.31	-	.39	-	0.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32

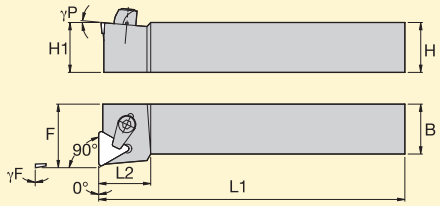
Order example:
Right hand: **CTCPR123A**

KENDEX Toolholders

KENDEX positive Inserts

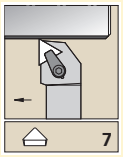
CTFP 0°

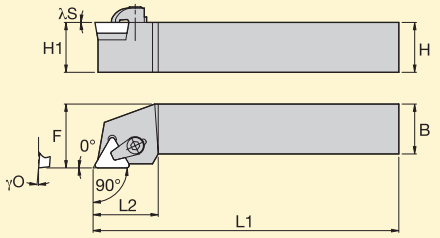




Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTFP R/L 082V	.50	.50	.750	3.50	.56	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTFP R/L 082B	.50	.50	.750	4.50	.56	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTFP R/L 102B	.63	.63	.875	4.50	.56	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTFPR123A	.75	.75	1.000	4.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTFP R/L 123B	.75	.75	1.000	4.50	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTFP R/L 163C	1.00	1.00	1.250	5.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFP R/L 163D	1.00	1.00	1.250	6.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFP R/L 164C	1.00	1.00	1.250	5.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFP R/L 164D	1.00	1.00	1.250	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFP R/L 854D	1.25	1.00	1.250	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFP R/L 864E	1.50	1.00	1.250	7.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFP R/L 204D	1.25	1.25	1.500	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFP R/L 865E	1.50	1.00	1.250	7.00	1.38	-	-	-	0.0	5.0	**TP..543**	**SM99**	**S132**	1/8	**CK24**	**STC19**	3/16

CTGP 0°

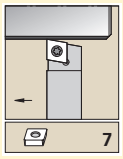


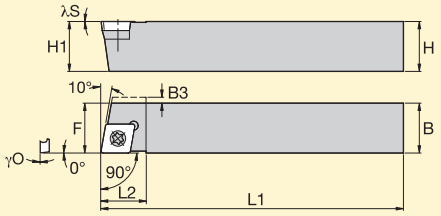


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CTGPR082V	.50	.50	.750	3.50	.75	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTGP R/L 082B	.50	.50	.750	4.50	.75	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTGP R/L 102B	.63	.63	.875	4.50	.75	-	-	-	0.0	5.0	**TP..221**	**SM119**	**SL344**	-	**CK19**	**STC9**	3/32
CTGPR123A	.75	.75	1.000	4.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTGP R/L 123B	.75	.75	1.000	4.50	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTGP R/L 163C	1.00	1.00	1.250	5.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGP R/L 163D	1.00	1.00	1.250	6.00	1.13	-	-	-	0.0	5.0	**TP..322**	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGP R/L 164C	1.00	1.00	1.250	5.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGP R/L 164D	1.00	1.00	1.250	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGP R/L 854D	1.25	1.00	1.250	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR864E	1.50	1.00	1.250	7.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGP R/L 204D	1.25	1.25	1.500	6.00	1.25	-	-	-	0.0	5.0	**TP..432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR865E	1.50	1.00	1.250	7.00	1.38	-	-	-	0.0	5.0	**TP..543**	**SM99**	**S132**	1/8	**CK24**	**STC19**	3/16
CTGP R/L 205D	1.25	1.25	1.500	6.00	1.38	-	-	-	0.0	5.0	**TP..543**	**SM99**	**S132**	1/8	**CK24**	**STC19**	3/16

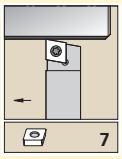
Order example:
Right hand: **CTFPR082V**
Left hand: **CTFPL082V**

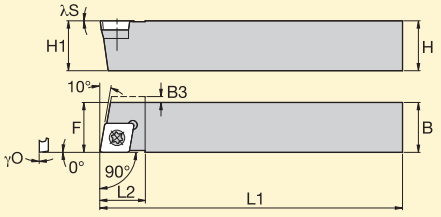
SCAC 0°





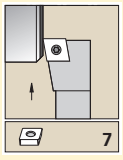
SCAP 0°

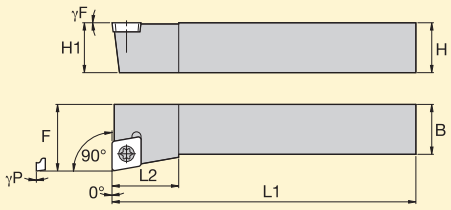




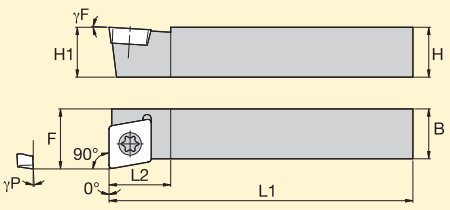
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCAC R/L 0452D	.28	.28	.281	6.00	.44	-	-	-	.09	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCAC R/L 052D	.31	.31	.312	6.00	.44	-	-	-	.09	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCAC R/L 062D	.38	.38	.375	6.00	.44	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCAC R/L 083D	.50	.50	.500	6.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	-	-	-	**MS1155**	T15
SCAC R/L 523Z	.50	.63	.625	3.25	.62	-	-	-	-	0.0	0.0	**CC..3252**	-	-	-	**MS1155**	T15
SCAC R/L 103B	.63	.63	.625	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SCAP R/L 0452D	.28	.28	.281	6.00	.44	-	-	-	.09	3.5	3.5	**CP..2151**	-	-	-	**MS1153**	T7
SCAP R/L 052D	.31	.31	.312	6.00	.44	-	-	-	.06	3.5	3.5	**CP..2151**	-	-	-	**MS1153**	T7
SCAP R/L 062D	.38	.38	.375	6.00	.44	-	-	-	-	3.5	3.5	**CP..2151**	-	-	-	**MS1153**	T7
SCAP R/L 083D	.50	.50	.500	6.00	.62	-	-	-	-	4.0	3.0	**CP..3252**	-	-	-	**MS1027**	T9

SCFC 0°





SCFP 0°



Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCFC R/L 052	.31	.31	.375	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCFC R/L 062	.38	.38	.500	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCFC R/L 082	.50	.50	.625	3.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCFC R/L 102	.63	.63	.750	4.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCFC R/L 103	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCFC R/L 123	.75	.75	1.000	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCFC R/L 163	1.00	1.00	1.250	6.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
										γF°	γP°						
SCFP R/L 062*	.38	.38	.500	2.50	.44	-	-	-	-	3.5	3.5	**CP..2151***	-	-	-	**MS1153**	T7
SCFP R/L 083V**	.50	.50	.625	3.50	.62	-	-	-	-	3.5	3.5	**CP..3252****	-	-	-	**MS1027**	T9

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.

**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

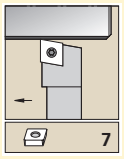
Order example:
Right hand: **SCACR0452D**

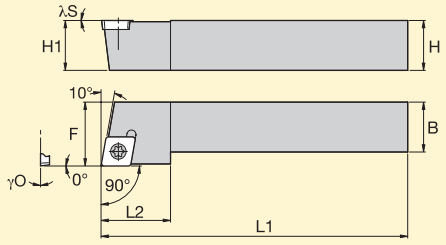
Left hand: **SCACL0452D**

SCREW-ON Toolholders

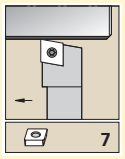
SCREW-ON Inserts

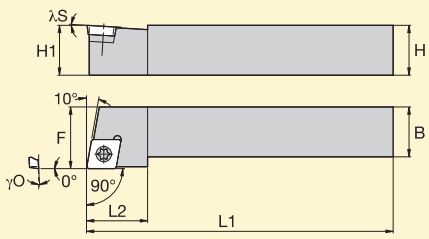
SCGC 0°





SCGP 0°

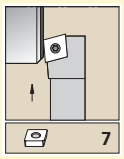


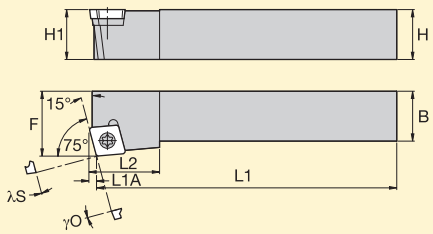


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCGC R/L 052	.31	.31	.375	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCGC R/L 062	.38	.38	.500	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCGC R/L 082	.50	.50	.625	3.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCGC R/L 102	.63	.63	.750	4.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCGC R/L 103	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCGC R/L 123	.75	.75	1.000	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCGC R/L 163	1.00	1.00	1.250	6.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°				Hex (inch)		
SCGP R/L 062*	.38	.38	.500	2.50	.44	-	-	-	-	3.5	3.5	**CP..2151***	**-**	**-**	-	**MS1153**	T7
SCGP R/L 083V**	.50	.50	.625	3.50	.62	-	-	-	-	3.5	3.5	**CP..3252****	**-**	**-**	-	**MS1027**	T9
SCGP R/L 123B**	.75	.75	1.000	4.50	.62	-	-	-	-	3.5	3.5	**CP..3252****	**SM417**	**MS1028**	3/32	**MS1027**	T9

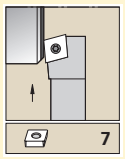
*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

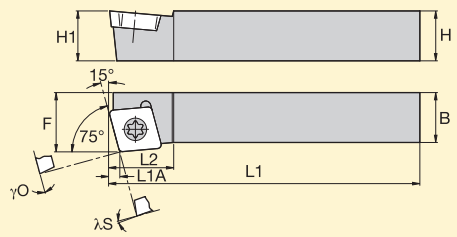
SCKC 15°





SCKP 15°



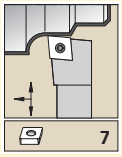


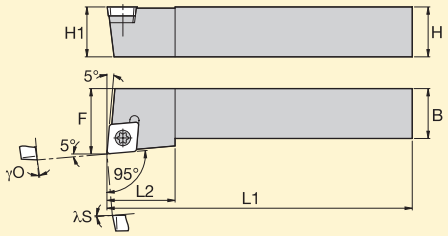
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCKC R/L 062	.38	.38	.500	2.50	.50	-	-	.06	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCKC R/L 082	.50	.50	.625	3.50	.50	-	-	.06	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCKC R/L 103	.63	.63	.750	4.00	.62	-	-	.09	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCKC R/L 123	.75	.75	1.000	4.50	.62	-	-	.09	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCKC R/L 163	1.00	1.00	1.250	6.00	.62	-	-	.09	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SCKP R/L 062*	.38	.38	.500	2.50	.44	-	-	.06	-	0.0	5.0	**CP..2151***	**-**	**-**	-	**MS1153**	T7
SCKP R/L 083V**	.50	.50	.625	3.50	.62	-	-	.09	-	0.0	5.0	**CP..3252****	**-**	**-**	-	**MS1027**	T9

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

Order example:
Right hand: **SCGCR052**
Left hand: **SCGCL052**

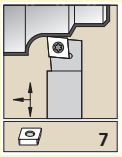
SCLC -5°

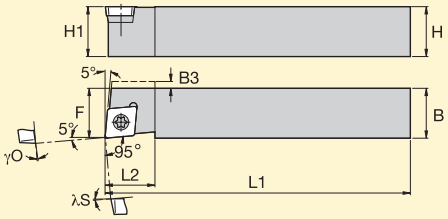




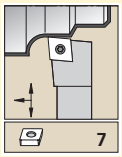
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCLC R/L 052	.31	.31	.375	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L 062	.38	.38	.500	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L 082	.50	.50	.625	3.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L 102	.63	.63	.750	4.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L 103	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCLC R/L 123	.75	.75	1.000	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCLC R/L 163	1.00	1.00	1.250	6.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCLC R/L 124B	.75	.75	1.000	4.50	.75	-	-	-	-	0.0	0.0	**CC..432**	**SKCP453**	**SRS4**	4,0	**MS1158**	T15
SCLC R/L 164D	1.00	1.00	1.250	6.00	.75	-	-	-	-	0.0	0.0	**CC..432**	**SKCP453**	**SRS4**	4,0	**MS1158**	T15
SCLC R/L 204D	1.25	1.25	1.500	6.00	.75	-	-	-	-	0.0	0.0	**CC..432**	**SKCP453**	**SRS4**	4,0	**MS1158**	T15

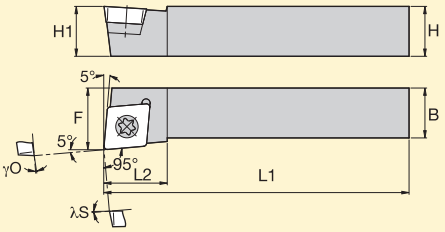
SCLC-F -5°





SCLP -5°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCLC R/L F0452D	.28	.28	.281	6.00	.50	-	-	-	.09	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L F052D	.31	.31	.313	6.00	.50	-	-	-	.06	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L F062D	.38	.38	.375	6.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L F082D	.50	.50	.500	6.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCLC R/L F083D	.50	.50	.500	6.00	.62	-	-	-	.09	0.0	0.0	**CC..3252**	**-**	**-**	-	**MS1155**	T15
SCLC R/L F523Z	.50	.63	.625	3.25	.62	-	-	-	-	0.0	0.0	**CC..3252**	**-**	**-**	-	**MS1155**	T15
SCLC R/L F103B	.63	.63	.625	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°				Hex (inch)		
SCLP R/L 062*	.38	.38	.500	2.50	.44	-	-	-	-	3.5	3.5	**CP..2151***	**-**	**-**	-	**MS1153**	T7
SCLP R/L 083V**	.50	.50	.625	3.50	.62	-	-	-	-	3.5	3.5	**CP..3252****	**-**	**-**	-	**MS1027**	T9
SCLP R/L 123B**	.75	.75	1.000	4.50	.62	-	-	-	-	3.5	3.5	**CP..3252****	**SM417**	**MS1028**	3/32	**MS1027**	T9

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.

**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

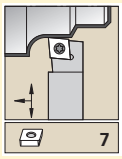
Order example:
Right hand: **SCLCR052**

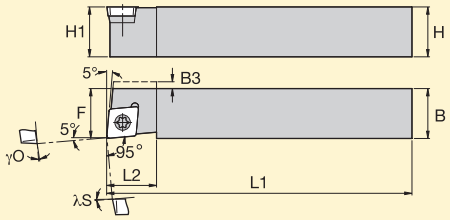
Left hand: **SCLCL052**

SCREW-ON Toolholders

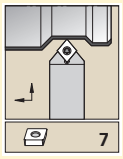
SCREW-ON Inserts

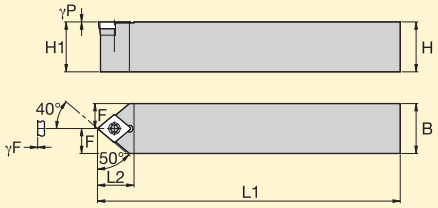
SCLP-F -5°





SCMC 40°



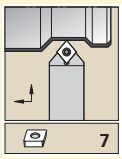


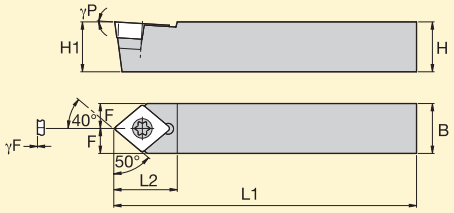
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCLP R/L F0452D*	.28	.28	.281	6.00	.44	-	-	-	.09	3.5	3.5	**CP..2151***	-	-	-	**MS1153**	T7
SCLP R/L F052D*	.31	.31	.312	6.00	.44	-	-	-	.06	3.5	3.5	**CP..2151***	-	-	-	**MS1153**	T7
SCLP R/L F062D*	.38	.38	.375	6.00	.44	-	-	-	-	3.5	3.5	**CP..2151***	-	-	-	**MS1153**	T7
SCLP R/L F083D**	.50	.50	.500	6.00	.62	-	-	-	-	3.5	3.5	**CP..3252****	-	-	-	**MS1027**	T9
										γF°	γP°						
SCMCN062	.38	.38	.188	2.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCMCN082	.50	.50	.250	3.50	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCMCN102	.63	.63	.312	4.00	.50	-	-	-	-	0.0	0.0	**CC..2151**	-	-	-	**MS1153**	T7
SCMCN083	.50	.50	.250	3.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	-	-	-	**MS1155**	T15
SCMCN103	.63	.63	.312	4.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCMCN123	.75	.75	.375	4.50	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCMCN163	1.00	1.00	.500	6.00	.62	-	-	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.

**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

SCMP 40°





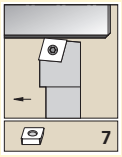
Catalog number	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Insert Screw	Torx
SCMPN062*	.38	.38	.188	2.50	.44	-	-	-	-	0.0	5.0	**CP..2151***	-	-	-	**MS1153**	T7
SCMPN083V**	.50	.50	.250	3.50	.62	-	-	-	-	0.0	5.0	**CP..3252****	-	-	-	**MS1027**	T9
SCMPN123B**	.75	.75	.375	4.50	.75	-	-	-	-	0.0	5.0	**CP..3252****	**SM417**	**MS1028**	3/32	**MS1027**	T9

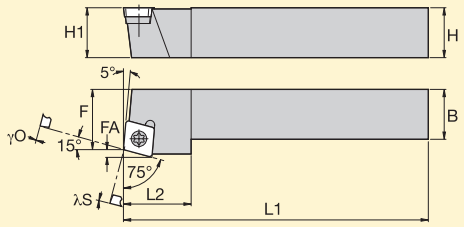
*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.

**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

Order example:
Right hand: **SCLPRF0452D**
Left hand: **SCLPLF0452D**

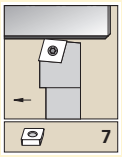
SCRC 15°

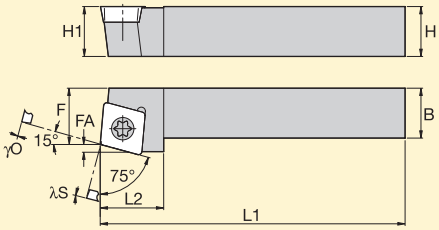




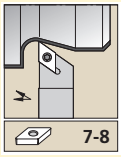
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCRC R/L 052	.31	.31	.377	2.50	.50	-	.06	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCRC R/L 062	.38	.38	.439	2.50	.50	-	.06	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCRC R/L 082	.50	.50	.564	3.50	.50	-	.06	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCRC R/L 102	.63	.63	.688	4.00	.50	-	.06	-	-	0.0	0.0	**CC..2151**	**-**	**-**	-	**MS1153**	T7
SCRC R/L 083	.50	.50	.548	3.50	.62	-	.09	-	-	0.0	0.0	**CC..3252**	**-**	**-**	-	**MS1155**	T15
SCRC R/L 103	.63	.63	.673	4.00	.62	-	.09	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCRC R/L 123	.75	.75	.798	4.50	.62	-	.09	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15
SCRC R/L 163	1.00	1.00	1.048	6.00	.62	-	.09	-	-	0.0	0.0	**CC..3252**	**SKCP343**	**SRS3**	3,5	**MS1156**	T15

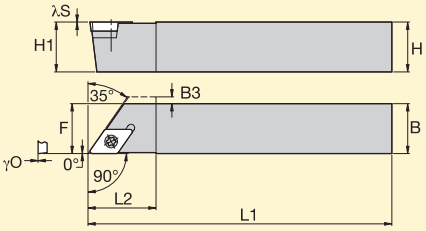
SCRP 15°





SDAC 0°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SCRP R/L 062*	.38	.38	.439	2.50	.44	-	.06	-	-	0.0	5.0	**CP..2151***	**-**	**-**	-	**MS1153**	T7
SCRP R/L 083V**	.50	.50	.537	3.50	.62	-	.09	-	-	0.0	5.0	**CP..3252****	**-**	**-**	-	**MS1027**	T9
										λS°	γO°						
SDAC R/L 062D	.38	.38	.375	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	**-**	**-**	-	**MS1153**	T7
SDAC R/L 082D	.50	.50	.500	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	**-**	**-**	-	**MS1153**	T7
SDAC R/L 083D	.50	.50	.500	6.00	.88	-	-	-	.06	0.0	0.0	**DC..3252**	**-**	**-**	-	**MS1155**	T15
SDAC R/L 103B	.63	.63	.625	4.50	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPMT/CPGM/CPGT/CPGW-21.5_ inserts.

**NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_). ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

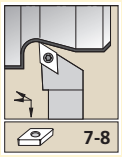
Order example:
Right hand: **SCRCR052**

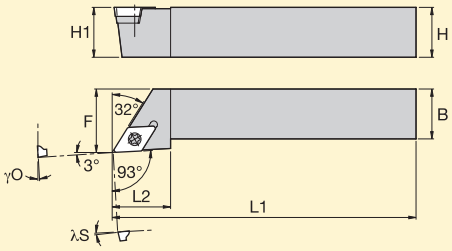
Left hand: **SCRCL052**

SCREW-ON Toolholders

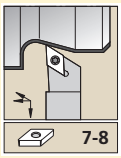
SCREW-ON Inserts

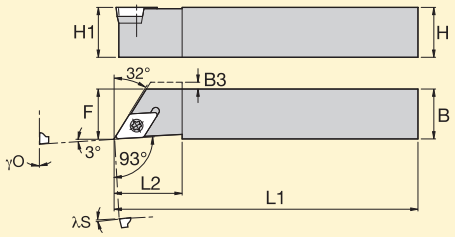
SDJC -3°





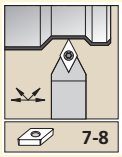
SDJC-F -3°

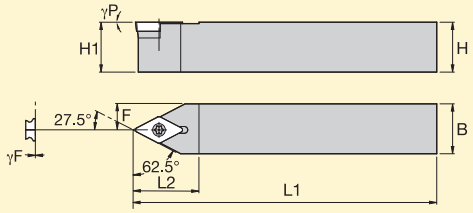




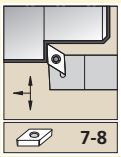
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SDJC R/L 052	.31	.31	.375	2.50	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L 062	.38	.38	.500	2.50	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L 082	.50	.50	.625	3.50	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L 102	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L 083	.50	.50	.625	3.50	.88	-	-	-	-	0.0	0.0	**DC..3252**	-	-	-	**MS1155**	T15
SDJC R/L 103	.63	.63	.750	4.00	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15
SDJC R/L 123	.75	.75	1.000	4.50	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15
SDJC R/L 163	1.00	1.00	1.250	6.00	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SDJC R/L F062D	.38	.38	.375	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L F082D	.50	.50	.500	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDJC R/L F083D	.50	.50	.500	6.00	.88	-	-	-	-	0.0	0.0	**DC..3252**	-	-	-	**MS1155**	T15
SDJC R/L F103B	.63	.63	.625	4.50	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15

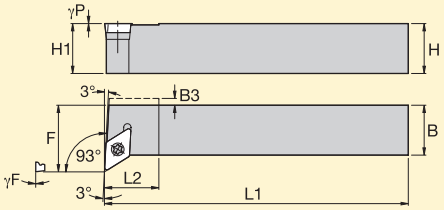
SDPC 27.5°





SDUC -3°

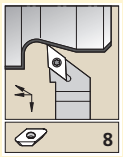


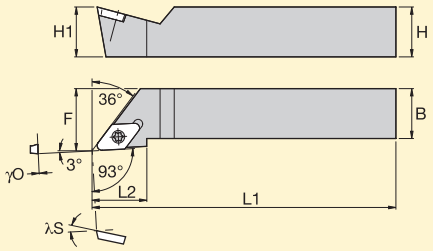


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SDPCN062D	.38	.38	.188	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDPCN082D	.50	.50	.250	6.00	.62	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDPCN083D	.50	.50	.250	6.00	.88	-	-	-	-	0.0	0.0	**DC..3252**	-	-	-	**MS1155**	T15
SDPCN103B	.63	.63	.312	4.50	.88	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15
										γF°	γP°						
SDUC R/L 082	.50	.50	.670	3.50	.50	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDUC R/L 102	.63	.63	.795	4.00	.50	-	-	-	-	0.0	0.0	**DC..2151**	-	-	-	**MS1153**	T7
SDUC R/L 083	.50	.50	.746	3.50	.62	-	-	-	.12	0.0	0.0	**DC..3252**	-	-	-	**MS1155**	T15
SDUC R/L 103	.63	.63	.871	4.00	.62	-	-	-	-	0.0	0.0	**DC..3252**	**SKDP343**	**SRS3**	3,5	**MS1156**	T15

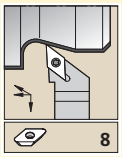
Order example:
Right hand: **SDJCR052**
Left hand: **SDJCL052**

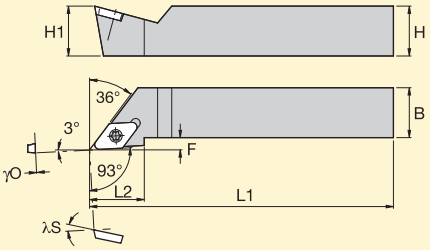
SFJF -3°





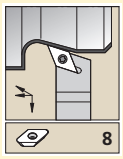
SFJF-S -3°

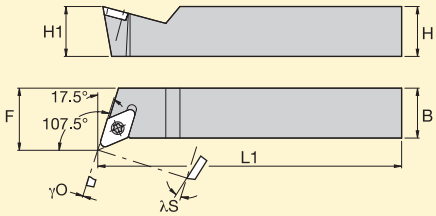




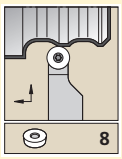
Catalog number	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
Right hand																	
SFJFRA165D	1.00	1.00	1.250	6.00	1.25	-	-	-	-	15.0	0.0	**FF..210430R**	-	-	-	**MS1129**	T15
SFJFR165D	1.00	1.00	1.250	6.00	1.25	-	-	-	-	15.0	0.0	**FF..533R**	-	-	-	**MS1129**	T15
SFJFR205D	1.25	1.25	1.500	6.00	1.25	-	-	-	-	15.0	0.0	**FF..533R**	-	-	-	**MS1129**	T15
SFJFR205E	1.25	1.25	1.500	7.00	1.25	-	-	-	-	15.0	0.0	**FF..533R**	-	-	-	**MS1129**	T15
Left hand																	
SFJFLA165D	1.00	1.00	1.250	6.00	1.25	-	-	-	-	15.0	0.0	**FF..210430L**	-	-	-	**MS1129**	T15
SFJFL165D	1.00	1.00	1.250	6.00	1.25	-	-	-	-	15.0	0.0	**FF..533L**	-	-	-	**MS1129**	T15
										λS°	γO°						
Right hand																	
SFJFRA855S	1.25	1.00	.250	7.00	1.25	-	-	-	-	15.0	0.0	**FF..210430R**	-	-	-	**MS1129**	T15
SFJFR855S	1.25	1.00	.250	7.00	1.25	-	-	-	-	15.0	0.0	**FF..533R**	-	-	-	**MS1129**	T15
Left hand																	
SFJFLA855S	1.25	1.00	.250	7.00	1.25	-	-	-	-	15.0	0.0	**FF..210430L**	-	-	-	**MS1129**	T15
SFJFL855S	1.25	1.00	.250	7.00	1.25	-	-	-	-	15.0	0.0	**FF..533L**	-	-	-	**MS1129**	T15

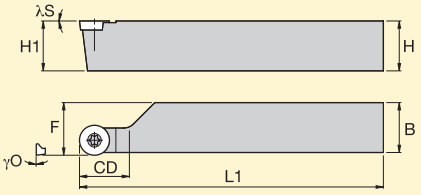
SFQF -17.5°





SRAC





Catalog number	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
Right hand																	
SFQFR165E	1.00	1.00	1.250	7.00	-	-	-	-	-	15.0	0.0	**FF..533R**	-	-	-	**MS1129**	T15
Left hand																	
SFQFL165E	1.00	1.00	1.250	7.00	-	-	-	-	-	15.0	0.0	**FF..533L**	-	-	-	**MS1129**	T15
										λS°	γO°						
SRAC R/L 162D	1.00	1.00	1.020	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..215**	-	-	-	**MS1153**	T7
SRAC R/L 202D	1.25	1.25	1.270	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..215**	-	-	-	**MS1153**	T7
SRAC R/L 163D	1.00	1.00	1.020	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..325**	**SR3**	-	-	**MS1156**	T15
SRAC R/L 203D	1.25	1.25	1.270	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..325**	**SR3**	-	-	**MS1156**	T15
SRAC R/L 164D	1.00	1.00	1.020	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..43**	**SR4**	-	-	**MS1158**	T15
SRAC R/L 204D	1.25	1.25	1.270	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..43**	**SR4**	-	-	**MS1158**	T15
SRAC R/L 244D	1.50	1.50	1.520	6.00	1.00	1.00	-	-	-	0.0	0.0	**RC..43**	**SR4**	-	-	**MS1158**	T15

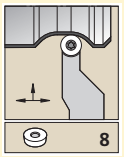
Order example:
Right hand: **SFJFRA165D**

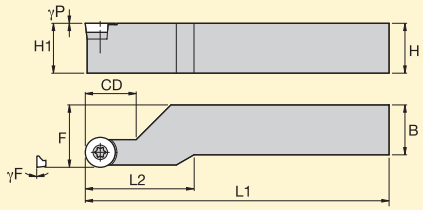
Left hand: **SFJFLA165D**

SCREW-ON Toolholders

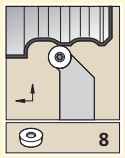
SCREW-ON Inserts

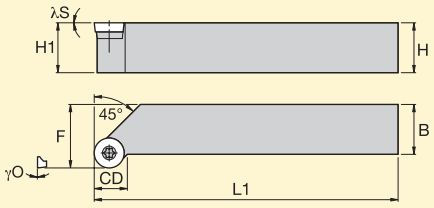
SRCC





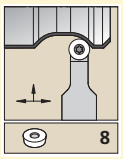
SRGC

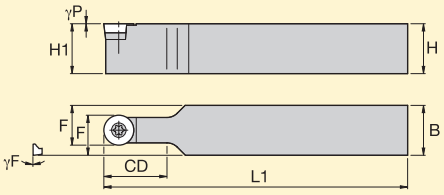




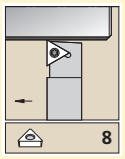
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SRCC R/L 122B	.75	.75	1.000	4.50	1.66	.81	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SRCC R/L 162D	1.00	1.00	1.250	6.00	1.66	.81	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SRCC R/L 123B	.75	.75	1.000	4.50	1.88	1.02	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SRCC R/L 163D	1.00	1.00	1.250	6.00	1.88	1.02	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SRCC R/L 203D	1.25	1.25	1.500	6.00	1.88	1.02	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
										λS°	γO°						
SRGC R/L 102	.63	.63	.750	4.00	-	.22	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SRGC R/L 122	.75	.75	1.000	4.50	-	.40	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SRGC R/L 162	1.00	1.00	1.250	6.00	-	.40	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SRGC R/L 123	.75	.75	1.000	4.50	-	.41	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SRGC R/L 163	1.00	1.00	1.250	6.00	-	.41	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SRGC R/L 203	1.25	1.25	1.500	6.00	-	.43	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15

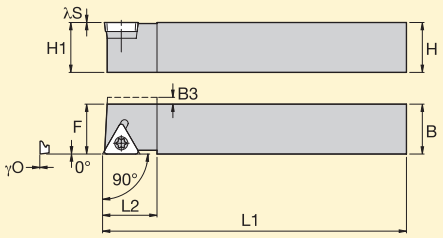
SROC





STAC 0°

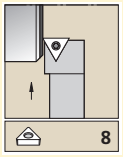


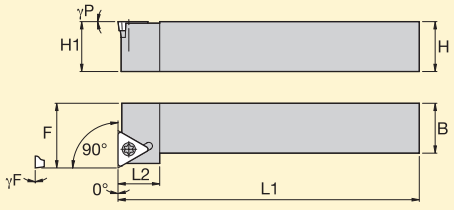


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SROCN102	.63	.63	.438	4.00	-	.62	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SROCN122	.75	.75	.500	4.50	-	.75	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SROCN162	1.00	1.00	.625	6.00	-	1.00	-	-	-	0.0	0.0	**RC..215**	**-**	**-**	-	**MS1153**	T7
SROCN123	.75	.75	.562	4.50	-	.75	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SROCN163	1.00	1.00	.688	6.00	-	1.00	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
SROCN203	1.25	1.25	.812	6.00	-	1.25	-	-	-	0.0	0.0	**RC..325**	**SR3**	**-**	-	**MS1156**	T15
										λS°	γO°						
STAC R/L 062D	.38	.38	.375	6.00	.62	-	-	-	.09	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STAC R/L 082D	.50	.50	.500	6.00	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STAC R/L 102B	.63	.63	.625	4.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STAC R/L 103B	.63	.63	.625	4.50	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15

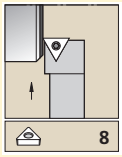
Order example:
Right hand: **SRCCR122B**
Left hand: **SRCCL122B**

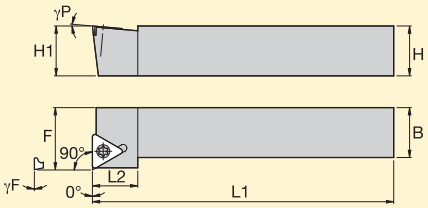
STFC 0°





STFP 0°

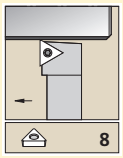


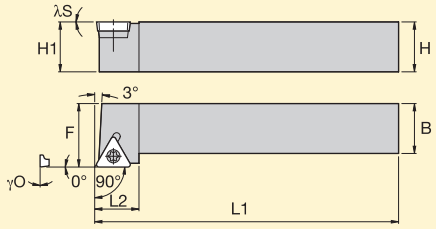


Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
STFC R/L 062	.38	.38	.500	2.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STFC R/L 082	.50	.50	.625	3.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STFC R/L 102	.63	.63	.750	4.00	.62		-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STFC R/L 103	.63	.63	.750	4.00	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
STFC R/L 123	.75	.75	1.000	4.50	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
STFC R/L 163	1.00	1.00	1.250	6.00	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
										γF°	γP°						
STFP R/L 062*	.38	.38	.500	2.50	.44	-	-	-	-	0.0	5.0	**TP..2151***	**-**	**-**	-	**MS1153**	T7
STFP R/L 082V*	.50	.50	.625	3.50	.44	-	-	-	-	0.0	5.0	**TP..2151***	**-**	**-**	-	**MS1153**	T7

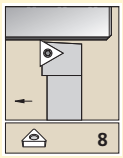
*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept TPMT/TPGM/TPGT/TPGW-21.5_ inserts.

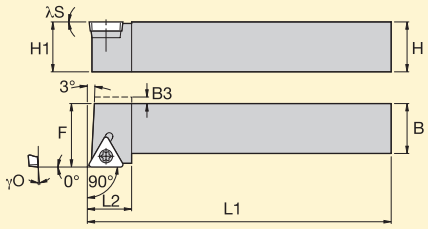
STGC 0°





STGP 0°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
STGC R/L 062	.38	.38	.500	2.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STGC R/L 082	.50	.50	.625	3.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STGC R/L 102	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	-	**MS1153**	T7
STGC R/L 103	.63	.63	.750	4.00	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
STGC R/L 123	.75	.75	1.000	4.50	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
STGC R/L 163	1.00	1.00	1.250	6.00	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
STGP R/L 0518*	.31	.31	.375	2.50	.50	-	-	-	.09	0.0	5.0	**TP..18151***	**-**	**-**	-	**MS1152**	T7
STGP R/L 062*	.38	.38	.500	2.50	.56	-	-	-	-	0.0	5.0	**TP..2151***	**-**	**-**	-	**MS1153**	T7
STGP R/L 082V*	.50	.50	.625	3.50	.56	-	-	-	-	0.0	5.0	**TP..2151***	**-**	**-**	-	**MS1153**	T7

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept TPMT/TPGM/TPGT/TPGW-21.5_ inserts.

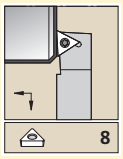
Order example:
Right hand: **STFCR062**

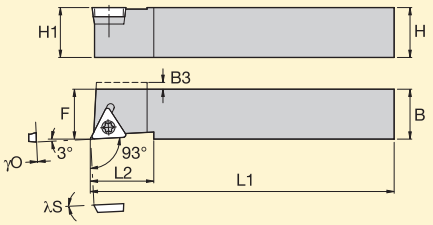
Left hand: **STFCL062**

SCREW-ON Toolholders

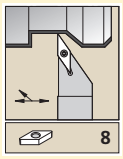
SCREW-ON Inserts

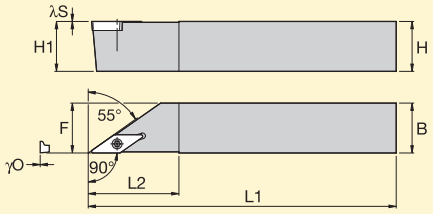
STJC-F -3°





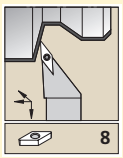
SVAB 0°

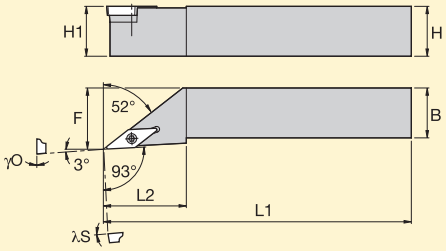




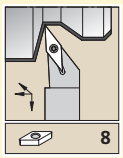
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
STJC R/L F062D	.38	.38	.375	6.00	.62	-	-	-	.09	0.0	0.0	**TC..2151**	**-**	**-**	**-**	**MS1153**	T7
STJC R/L F082D	.50	.50	.500	6.00	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	**-**	**MS1153**	T7
STJC R/L F102B	.63	.63	.625	4.50	.62	-	-	-	-	0.0	0.0	**TC..2151**	**-**	**-**	**-**	**MS1153**	T7
STJC R/L F103B	.63	.63	.625	4.50	.75	-	-	-	-	0.0	0.0	**TC..3252**	**SKTP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SVAB R/L 062D	.38	.38	.375	6.00	.88	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVAB R/L 082D	.50	.50	.500	6.00	.88	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVAB R/L 103B	.63	.63	.625	4.50	1.38	-	-	-	-	0.0	0.0	**VB..332**	**-**	**-**	**-**	**MS1155**	T15

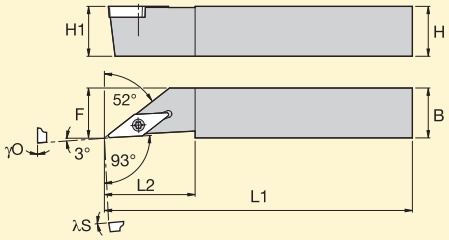
SVJB -3°





SVJB-F -3°



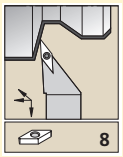


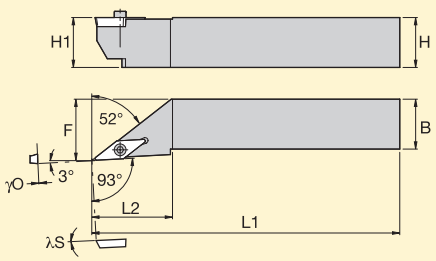
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SVJB R/L 062	.38	.38	.500	2.50	.88	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVJB R/L 082	.50	.50	.625	3.50	.88	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVJB R/L 102	.63	.63	.750	4.00	.88	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVJB R/L 123	.75	.75	1.000	4.50	1.38	-	-	-	-	0.0	0.0	**VB..332**	**SKVN343**	**SRS3**	3,5	**MS1156**	T15
SVJB R/L 163	1.00	1.00	1.250	6.00	1.38	-	-	-	-	0.0	0.0	**VB..332**	**SKVN343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SVJB R/L F062D	.38	.38	.375	6.00	.94	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVJB R/L F082D	.50	.50	.500	6.00	.94	-	-	-	-	0.0	0.0	**VB..221**	**-**	**-**	**-**	**MS1153**	T7
SVJB R/L F103B	.63	.63	.625	4.50	1.44	-	-	-	-	0.0	0.0	**VB..332**	**-**	**-**	**-**	**MS1155**	T15

Order example:
Right hand: **STJCRF062D**

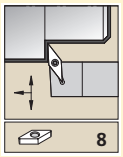
Left hand: **STJCLF062D**

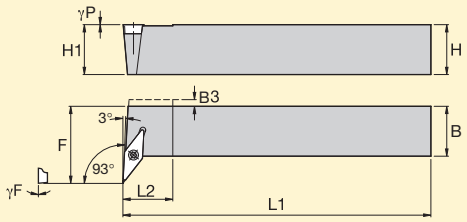
SVJP-W -3°





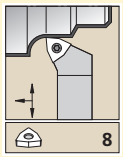
SVUB -3°

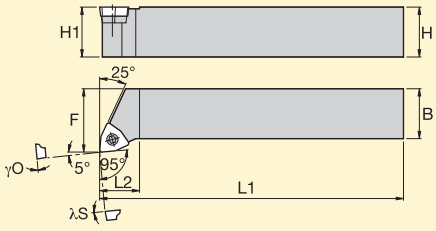




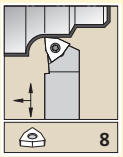
Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Hex (inch)
SVJP R/L 164EW	1.00	1.00	1.250	7.00	1.62		-	-	-	0.0	0.0	**VP..443**	-	-	-	**S411**	5/32
SVJP R/L 204EW	1.25	1.25	1.500	7.00	1.62		-	-	-	0.0	0.0	**VP..443**	-	-	-	**S411**	5/32
SVJP R/L 244EW	1.50	1.50	2.000	7.00	1.75		-	-	-	0.0	0.0	**VP..443**	-	-	-	**S411**	5/32
										γF°	γP°						Torx
SVUB R/L 082	.50	.50	.830	3.50	.50	-	-	-	.12	0.0	0.0	**VB..221**	-	-	-	**MS1153**	T7
SVUB R/L 102	.63	.63	.955	4.00	.50	-	-	-	-	0.0	0.0	**VB..221**	-	-	-	**MS1153**	T7

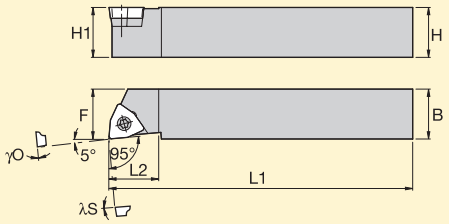
SWLC -5°





SWLC-F -5°





Catalog number Right hand/Left hand	H = H1	B	F	L1	L2	CD	FA	L1A	B3	λS	γO°	Gage Insert	Shim	Shim Screw	Hex (mm)	Insert Screw	Torx
SWLC R/L 052	.31	.31	.375	2.50	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L 062	.38	.38	.500	2.50	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L 082	.50	.50	.625	3.50	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L 102	.63	.63	.750	4.00	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L 103	.63	.63	.750	4.00	.62	-	-	-	-	0.0	0.0	**WC..3252**	**SKWP343**	**SRS3**	3,5	**MS1156**	T15
SWLC R/L 123	.75	.75	1.000	4.50	.62	-	-	-	-	0.0	0.0	**WC..3252**	**SKWP343**	**SRS3**	3,5	**MS1156**	T15
SWLC R/L 163	1.00	1.00	1.250	6.00	.62	-	-	-	-	0.0	0.0	**WC..3252**	**SKWP343**	**SRS3**	3,5	**MS1156**	T15
										λS°	γO°						
SWLC R/L F062D	.38	.38	.375	6.00	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L F082D	.50	.50	.500	6.00	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L F102B	.63	.63	.625	4.50	.50	-	-	-	-	0.0	0.0	**WC..2151**	-	-	-	**MS1153**	T7
SWLC R/L F103B	.63	.63	.625	4.50	.62	-	-	-	-	0.0	0.0	**WC..3252**	**SKWP343**	**SRS3**	3,5	**MS1156**	T15

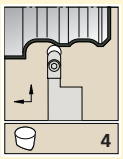
Order example:
Right hand: **SVJPR164EW**

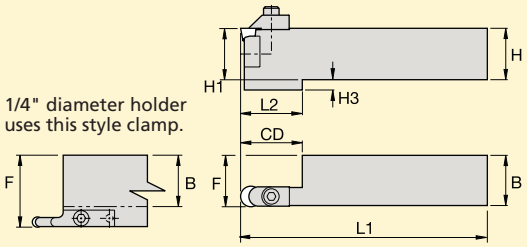
Left hand: **SVJPL164EW**

V-BOTTOM ROUND Toolholders

KENDEX positive Inserts

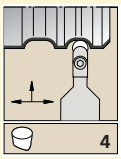
411-VRS

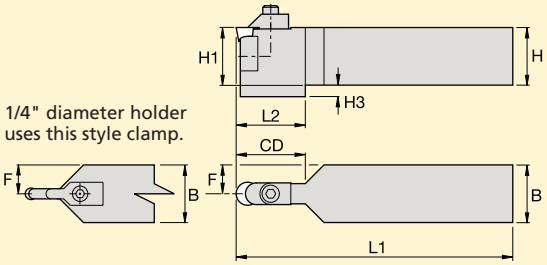




Catalog number	H = H1	B	F	L1	L2	CD	H3	Gage Insert	Nest	Nest Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
4111492VRS	1.00	1.00	1.500	6.00	.75	.75	.50	**R..V23**	**410631**	**S57**	1/16	**411905250VRC**	**S339**	3/16
4111512VRS	1.25	1.25	1.750	6.00	.75	.75	.25	**R..V23**	**410631**	**S57**	1/16	**411905250VRC**	**S339**	3/16
4119572VRS	1.50	1.50	2.000	6.00	-	.75	-	**R..V23**	**410631**	**S57**	1/16	**411905250VRC**	**S339**	3/16
4111573VRS	1.00	1.00	1.000	6.00	1.13	1.13	.50	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111593VRS	1.25	1.25	1.250	6.00	1.13	1.13	.25	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111613VRS	1.50	1.50	1.500	6.00	-	1.13	-	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111654VRS	1.00	1.00	1.000	6.00	1.50	1.50	.50	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
4111674VRS	1.25	1.25	1.250	6.00	1.50	1.50	.25	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
4111694VRS	1.50	1.50	1.500	6.00	-	1.50	-	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
Left hand														
4111502VRS	1.00	1.00	1.500	6.00	.75	.75	.50	**R..V23**	**410631**	**S57**	1/16	**411906250VRC**	**S339**	3/16
4119562VRS	1.25	1.25	1.750	6.00	.75	.75	.25	**R..V23**	**410631**	**S57**	1/16	**411906250VRC**	**S339**	3/16
4119582VRS	1.50	1.50	2.000	6.00	-	.75	-	**R..V23**	**410631**	**S57**	1/16	**411906250VRC**	**S339**	3/16
4111583VRS	1.00	1.00	1.000	6.00	1.13	1.13	.50	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111603VRS	1.25	1.25	1.250	6.00	1.13	1.13	.25	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111623VRS	1.50	1.50	1.500	6.00	-	1.13	-	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4111664VRS	1.00	1.00	1.000	6.00	1.50	1.50	.50	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
4111684VRS	1.25	1.25	1.250	6.00	1.50	1.50	.25	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
4111704VRS	1.50	1.50	1.500	6.00	-	1.50	-	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16

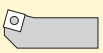
CRDP



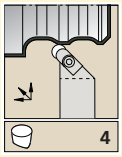


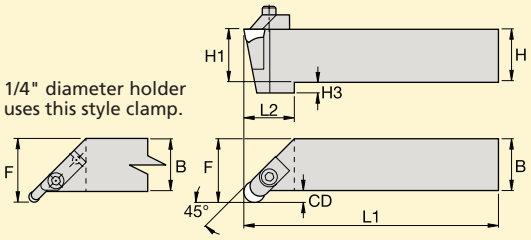
Catalog number	H = H1	B	F	L1	L2	CD	H3	Gage Insert	Nest	Nest Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
CRDPN162V	1.00	1.00	.500	6.00	.75	.75	.50	**R..V23**	**410631**	**S57**	1/16	**411910250VRC**	**S339**	3/16
CRDPN202V	1.25	1.25	.625	6.00	.75	.75	.25	**R..V23**	**410631**	**S57**	1/16	**411910250VRC**	**S339**	3/16
CRDPN163V	1.00	1.00	.500	6.00	1.13	1.13	.50	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
CRDPN203V	1.25	1.25	.625	6.00	1.13	1.13	.25	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
CRDPN164V	1.00	1.00	.500	6.00	1.50	1.50	.50	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
CRDPN204V	1.25	1.25	.625	6.00	1.50	1.50	.25	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
CRDPN244V	1.50	1.50	.750	6.00	-	1.50	-	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16

Order example:
Right hand: **4111492VRS**

Left hand: **4111502VRS** 

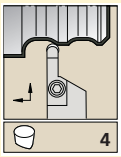
CRGP

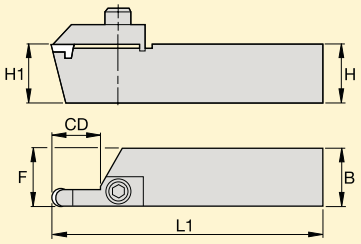




Catalog number	H = H1	B	F	L1	L2	CD	H3	Gage Insert	Nest	Nest Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
CRGPR162V	1.00	1.00	1.250	6.00	1.63	.25	.50	**R..V23**	**411108**	**S57**	1/16	**412131250GC**	**S339**	3/16
CRGPR202V	1.25	1.25	1.500	6.00	1.63	.25	.25	**R..V23**	**411108**	**S57**	1/16	**412131250GC**	**S339**	3/16
CRGPR163V	1.00	1.00	1.250	6.00	1.00	.25	.50	**R..V35**	**414009**	**S515**	5/64	**308063**	**S410**	5/32
CRGPR203V	1.25	1.25	1.500	6.00	1.00	.25	.25	**R..V35**	**414009**	**S515**	5/64	**308063**	**S410**	5/32
CRGPR164V	1.00	1.00	1.250	6.00	1.19	.25	.50	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16
CRGPR204V	1.25	1.25	1.500	6.00	1.19	.25	.25	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16
CRGPR244V	1.50	1.50	1.750	6.00	-	.25	-	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16
Left hand														
CRGPL162V	1.00	1.00	1.250	6.00	1.63	.25	.50	**R..V23**	**411108**	**S57**	1/16	**412132250GC**	**S339**	3/16
CRGPL202V	1.25	1.25	1.500	6.00	1.63	.25	.25	**R..V23**	**411108**	**S57**	1/16	**412132250GC**	**S339**	3/16
CRGPL163V	1.00	1.00	1.250	6.00	1.00	.25	.50	**R..V35**	**414009**	**S515**	5/64	**308063**	**S410**	5/32
CRGPL203V	1.25	1.25	1.500	6.00	1.00	.25	.25	**R..V35**	**414009**	**S515**	5/64	**308063**	**S410**	5/32
CRGPL164V	1.00	1.00	1.250	6.00	1.19	.25	.50	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16
CRGPL204V	1.25	1.25	1.500	6.00	1.19	.25	.25	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16
CRGPL244V	1.50	1.50	1.750	6.00	-	.25	-	**R..V45**	**414008**	**S1605**	1/8	**308136C**	**S337**	3/16

VRAO





Catalog number	H = H1	B	F	L1	L2	CD	H3	Gage Insert	Nest	Nest Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
VRAOR203E	1.25	1.25	1.281	7.00	-	1.31	-	**R..V35**	**-**	-	-	**CM148**	**S153**	3/16
Left hand														
VRAOL203E	1.25	1.25	1.281	7.00	-	1.31	-	**R..V35**	**-**	-	-	**CM149**	**S153**	3/16

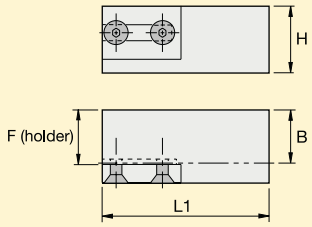
Order example:
Right hand: **CRGPR162V**

Left hand: **CRGPL162V**

V-BOTTOM ROUND Toolholders

KENDEX positive Inserts

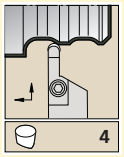
411



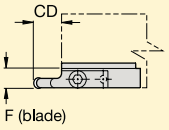
Catalog number	H	B	F	L1	L2	CD	H3	Gage Insert	Nest	Support Blade Screw (2 req'd)	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
411055	1.00	1.00	1.031	4.50	-	-	-	-	-	**S152**	3/16	-	-	-
411059	1.25	1.25	1.281	5.50	-	-	-	-	-	**S152**	3/16	-	-	-
411015	1.50	1.50	1.531	7.50	-	-	-	-	-	**S152**	3/16	-	-	-
Left hand														
411056	1.00	1.00	1.031	4.50	-	-	-	-	-	**S152**	3/16	-	-	-
411449	1.25	1.25	1.281	5.50	-	-	-	-	-	**S152**	3/16	-	-	-
411016	1.50	1.50	1.531	7.50	-	-	-	-	-	**S152**	3/16	-	-	-

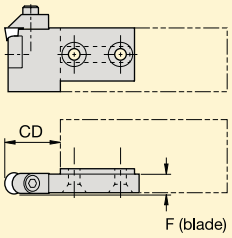
Note:
Support blade must be ordered separately.
Support blade screws are supplied with the toolholder.

411-VR

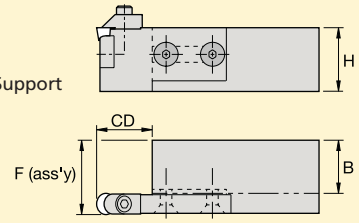


Support Blade





Toolholder and Support Blade Assembly



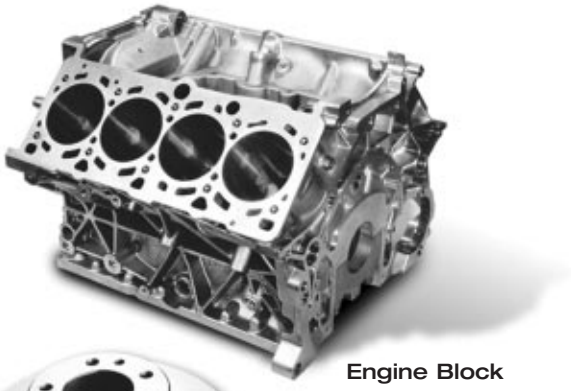
Catalog number	H	B	F	L1	L2	CD	H3	Gage Insert	Nest	Support Nest Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
4119592VR	-	-	.469	-	-	.75	-	**R..V23**	**410631**	**S57**	1/16	**411905250VRC**	**S339**	3/16
4110113VR	-	-	.469	-	-	1.12	-	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4110094VR	-	-	.469	-	-	1.50	-	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16
Left hand														
4119602VR	-	-	.469	-	-	.75	-	**R..V23**	**410631**	**S57**	1/16	**411906250VRC**	**S339**	3/16
4110123VR	-	-	.469	-	-	1.12	-	**R..V35**	**413970**	**S515**	5/64	**308063**	**S410**	5/32
4110104VR	-	-	.469	-	-	1.50	-	**R..V45**	**414007**	**S1605**	1/8	**308136C**	**S337**	3/16

Note:
Nest, nest screw, clamp and clamp screw are supplied with the support blade.

Order example:
Right hand: **411055** Left hand: **411056**

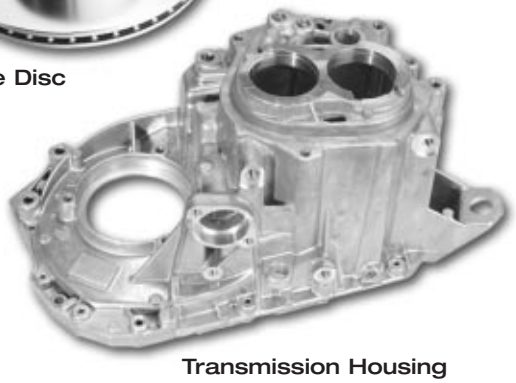
Engineering Your Competitive Edge FOR AUTOMOTIVE

Kennametal enables leading vehicle manufacturers to reduce **cost per part**. Every day, in 60 countries worldwide — we deliver **customized tooling innovations** and **process-optimization services** to meet tough productivity targets.



Engine Block

Brake Disc



Transmission Housing

Kennametal Complete

Our "Kennametal Complete" suite of global metalcutting services, custom-engineered solutions, and alliance partnerships can provide you total turnkey solutions — including value-chain and process-optimization enhancements — to maximize your productivity and profitability!

Call 800/446-7738 for your FREE Kennametal Automotive Solutions CD!

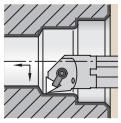
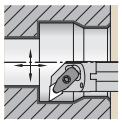
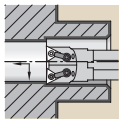
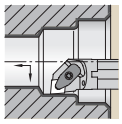
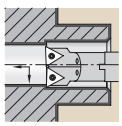
Let us prove it.

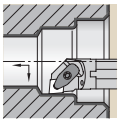
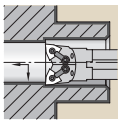
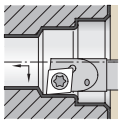
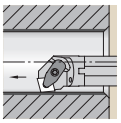
Call 800/446-7738 or visit www.kennametal.com

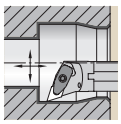
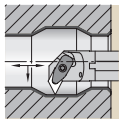
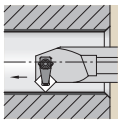
KENNAMETAL®

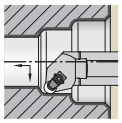
ENGINEERING YOUR COMPETITIVE EDGE

Boring Bar Selection Guide

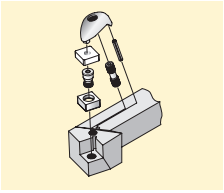
Tool Path	Lead Angle	Clamping Style and Insert Shape	Boring	Back Boring	Profiling	Page
0° Lead Angle						
	0°	C 80°				
		KENLOC	●			A206
		SCREW-ON	●		●	A216, A217
		SCREW-ON	●		●	A218
		KENCLAMP	●			A204
		T 60°				
		KENLOC	●			A208
		KENCLAMP	●			A205
		KENDEX	●		●	A214, A215
		SCREW-ON	●		●	A226, A227
			●		●	A228, A229
-3° Lead Angle						
	-3°	D 55°				
		KENLOC	●		●	A207
		KENCLAMP	●		●	A205
		SCREW-ON	●		●	A224, A225
		TNT	●		●	A210
		V 35°				
		KENLOC	●		●	A208
		SCREW-ON	●		●	A234
		T 60°				
		KENLOC	●			A208
		SCREW-ON	●			A233
		W 80°				
		SCREW-ON	●		●	A235
-5° Lead Angle						
	-5°	C 80°				
		KENLOC	●			A206, A207
		KENCLAMP	●		●	A204
		KENDEX	●		●	A212, A214
		SCREW-ON	●		●	A218, A219
			●		●	A220, A221
			●		●	A222, A223
			●		●	A234
		TNT	●		●	A210

Tool Path	Lead Angle	Clamping Style and Insert Shape	Boring	Back Boring	Profiling	Page
	-5°	T 60°				
		KENDEX	●		●	A213, A215
		SCREW-ON	●		●	A229, A230
			●		●	A231, A232
		D 55°				
		SCREW-ON		●		A225
		V 35°				
		SCREW-ON	●		●	A233
		W 80°				
		KENLOC	●			A209
		SCREW-ON	●		●	A234, A235
		TNT	●		●	A211
7° Lead Angle						
	7°	C 80°				
		SCREW-ON	●		●	A219
-10 Degree Lead Angle						
	-10°	V 35°				
		SCREW-ON	●		●	A234
15° and -15° Lead Angle						
	15°	C 80°				
		KENLOC	●			A206
		KENCLAMP	●			A204
		S 90°				
		KENLOC	●			A208
		KENCLAMP	●			A205
		KENDEX	●			A213, A214
		TNT	●			A211
	-15°	F 50°				
		SCREW-ON	●		●	A225

Tool Path	Lead Angle	Clamping Style and Insert Shape	Boring	Back Boring	Profiling	Page
-17.5° Lead Angle						
	-17.5°	55° D				
		KENLOC	●		●	**A207**
		KENCLAMP	●		●	**A205**
		35° V				
		SCREW-ON	●		●	**A233**
27.5° Lead Angle						
	27.5°	55° D				
		KENLOC	●		●	**A207**
		KENCLAMP	●		●	**A204**
45° Lead Angle						
	45°	90° S				
		TNT	●			**A211**

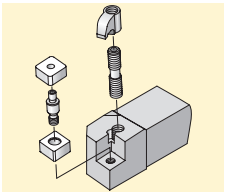
Tool Path	Lead Angle	Clamping Style and Insert Shape	Boring	Back Boring	Profiling	Page
		R				
		KENDEX	●		●	**A212**
		TNT	●		●	**A210**

Clamping Styles



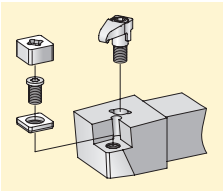
KENCLAMP Style

- Industry's quickest insert indexing system
- Ensures insert repeatability and seating
- Reduced chatter and improved tool life



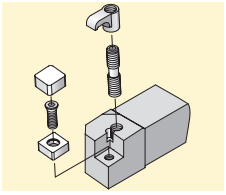
KENLOC Style

- Suitable for KENLOC inserts
- Lock pin and top clamp provide rigid clamping
- Wide variety of insert styles can be used
- Tools can be used with or without clamp



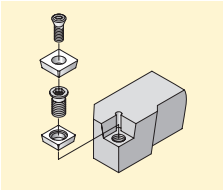
TOP NOTCH Turning Style

- Proven superior system in holding ceramic inserts rigidly in turning and profiling operations
- Uses standard insert sizes: 80°, 55°, square, and trigon
- This system offers added versatility of using optional hardware to hold standard KENDEX and KENLOC inserts



KENDEX Style

- Suitable for KENDEX inserts
- Chipbreaker option available for ceramic inserts
- Wide variety of insert styles can be used

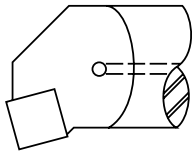
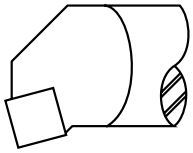
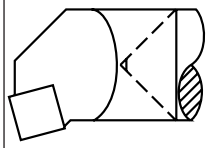
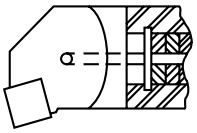
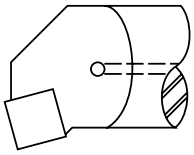
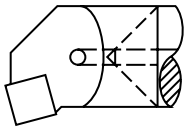
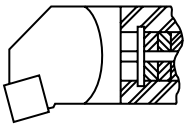
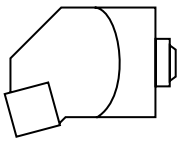
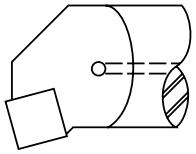


SCREW-ON Style

- Top clamping by screw for SCREW-ON inserts

Boring Bar and Head Identification System

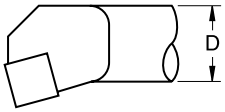
1. Bar Type

A  steel bar with coolant	S  steel bar without coolant	C  carbide bar	D  DeVibrator bar with coolant	D  tuneable bar with coolant
E  carbide bar with coolant	B  DeVibrator	H  interchangeable head	J  heavy metal bar with coolant	

Example:

A

Inch:
A two-digit number which indicates the bar diameter in 1/16-inch increments.



2. Bar Diameter

32

3. Bar Length**

3	–	F
3.5	–	G
4	–	H
4.5	–	J
5	–	K
5.5	–	L
6	–	M
6.5	–	N
6.75	–	P
7	–	Q
8	–	R
10	–	S
12	–	T
14	–	U
16	–	V
18	–	W
20	–	Y

** Used only when more than one length is available or a special length is required.

5. Insert Shape

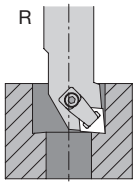
C 80°	D 55°	K/N 55°
L 90°	R	S 90°
T 60°	V 35°	W 80°

7. Insert Clearance Angle

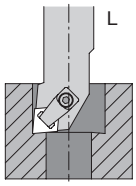
N 0°	D 15°
B 5°	E 20°
C 7°	F 25°
P 11°	

8. Hand of Tool

Right-hand boring bar



Left-hand boring bar



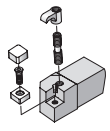
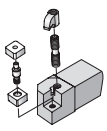
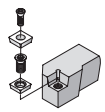
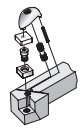
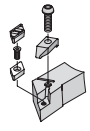
9. Insert Size

Insert IC

Number of 1/8ths of "D"

M	S	K	N	R	4	D

4. Insert Holding Method

C  KENDEX	M  KENLOC
S  SCREW -ON	D*  KENCLAMP
N*  TOP NOTCH Profiling	

*Kennametal standard only

6. Bar Style or Lead Angle

E 30°	F 0°	K 15°
L 5° 5°	L (E-style Insert) 7.5° 7.5°	P 27.5°
Q 17.5°	S 45°	U 3°
X 5°		

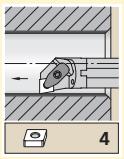
10. Additional Information

M..
TNT/MTS clamping system for ceramic and PCBN inserts
D
dual pocket
AP5
axial positive
KC
KENCLAMP
+
insert thickness

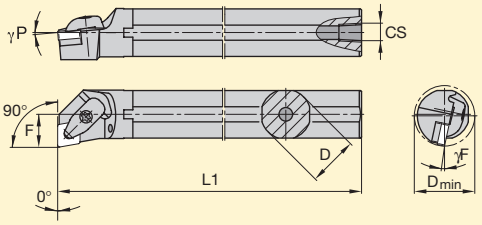
KENCLAMP Boring Bars

KENLOC Inserts

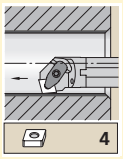
A-DCFN-KC 0°



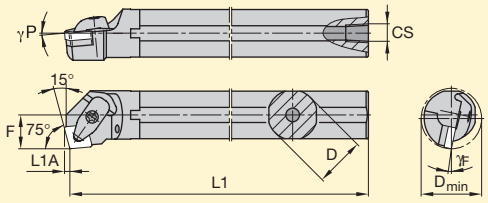
Steel shank with through coolant



A-DCKN-KC 15°

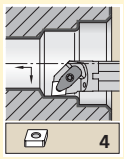


Steel shank with through coolant

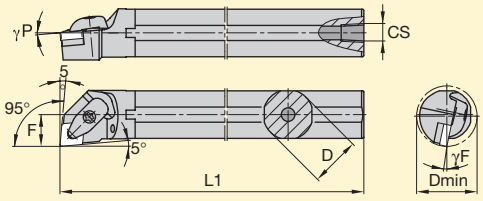


Catalog number Right hand/Left hand	D	Dmin	F	L1	L2	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx Plus	Clamp	Slotted Pin	Clamp Screw	Torx Plus
A16TDCFN R/L 4KC3	1.000	1.200	.640	12.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDCFN R/L 4KC3	1.250	1.470	.765	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP4S15IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDCFN R/L 4KC3	1.500	1.760	.890	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
								γF°	γP°								
A20UDCKN R/L 4KC3	1.250	1.705	1.000	14.00	-	.456	1/4-18 NPT	-14.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDCKN R/L 4KC3	1.500	2.000	1.125	14.00	-	.456	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDCKN R/L 4KC3	2.000	2.500	1.375	16.00	-	.456	1/4-18 NPT	-8.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDCKN R/L 5KC4	2.000	2.500	1.375	16.00	-	.608	1/4-18 NPT	-10.0	-5.0	**CN..543**	**ICSN533**	**KMSP515IP**	15IP	**CM209**	**SSP025018M**	**STCM1115IP**	15IP

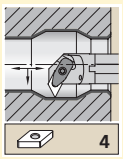
A-DCLN-KC -5°



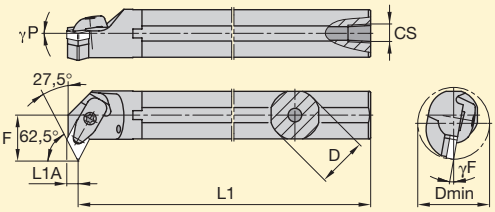
Steel shank with through coolant



A-DDPN-KC 27.5°



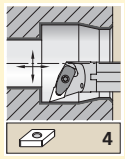
Steel shank with through coolant



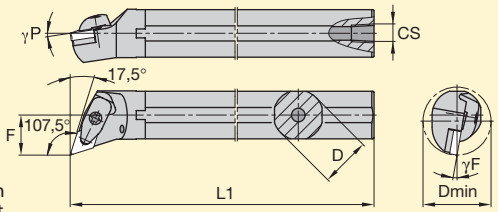
Catalog number Right hand/Left hand	D	Dmin	F	L1	L2	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx Plus	Clamp	Slotted Pin	Clamp Screw	Torx Plus
A16TDCLN R/L 3KC2	1.000	1.200	.640	12.00	-	-	1/4-18 NPT	-10.0	-5.0	**CN..322**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A16TDCLN R/L 4KC3	1.000	1.200	.640	12.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDCLN R/L 4KC3	1.250	1.470	.765	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP4S15IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDCLN R/L 4KC3	1.500	1.760	.890	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDCLN R/L 5KC4	1.500	1.760	.890	14.00	-	-	1/4-18 NPT	-14.0	-5.0	**CN..543**	**ICSN533**	**KMSP5S15IP**	15IP	**CM209**	**SSP025018M**	**STCM1115IP**	15IP
A28UDCLN R/L 4KC3	1.750	2.010	1.015	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDCLN R/L 4KC3	2.000	2.400	1.281	16.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDCLN R/L 5KC4	2.000	2.400	1.281	16.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..543**	**ICSN533**	**KMSP515IP**	15IP	**CM209**	**SSP025018M**	**STCM1115IP**	15IP
A32VDCLN R/L 6KC4	2.000	2.400	1.281	16.00	-	-	1/4-18 NPT	-12.0	-5.0	**CN..643**	**ICSN633**	**KMSP625IP**	25IP	**CM210**	**SSP025018M**	**STCM425IP**	25IP
A40VDCLN R/L 4KC3	2.500	3.030	1.531	16.00	-	-	1/4-18 NPT	-8.0	-5.0	**CN..432**	**ICSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A40VDCLN R/L 6KC4	2.500	3.030	1.531	16.00	-	-	1/4-18 NPT	-10.0	-5.0	**CN..643**	**ICSN633**	**KMSP625IP**	25IP	**CM210**	**SSP025018M**	**STCM425IP**	25IP
								γF°	γP°								
A20UDDPN R/L 4KC3	1.250	1.705	1.000	14.00	-	.256	1/4-18 NPT	-13.0	0.0	**DN.432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDDPN R/L 4KC3	1.500	2.000	1.125	14.00	-	.259	1/4-18 NPT	-10.0	0.0	**DN.432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP

Order example:
Right hand: **A16TDCFNR4KC3**
Left hand: **A16TDCFNL4KC3**

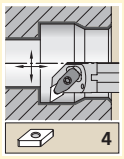
A-DDQN-KC -17.5°



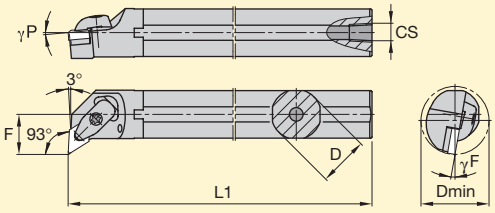
Steel shank with through coolant



A-DDUN-KC -3°



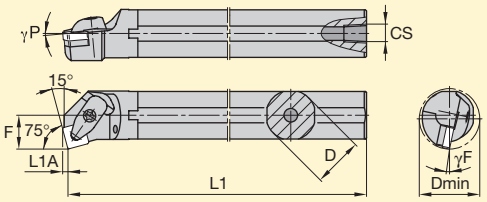
Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L2	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx Plus	Clamp	Slotted Pin	Clamp Screw	Torx Plus
A20UDDQN R/L 4KC3	1.250	1.705	1.000	14.00	-	-	1/4-18 NPT	-10.0	-12.0	**DN.432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDDQN R/L 4KC3	1.500	2.000	1.125	14.00	-	-	1/4-18 NPT	-8.5	-8.5	**DN.432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
								γF°	γP°								
A16TDDUN R/L 3KC3	1.000	1.300	.750	12.00	-	-	1/4-18 NPT	-12.0	-5.0	**DN..332**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDDUN R/L 3KC3	1.250	1.705	1.000	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**DN..332**	**IDSN322**	**KMSP315IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDDUN R/L 4KC3	1.250	1.705	1.000	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDDUN R/L 4KC3	1.500	2.000	1.125	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A28UDDUN R/L 4KC3	1.750	2.250	1.250	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDDUN R/L 4KC3	2.000	2.500	1.375	16.00	-	-	1/4-18 NPT	-8.0	-5.0	**DN..432**	**IDSN443**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP

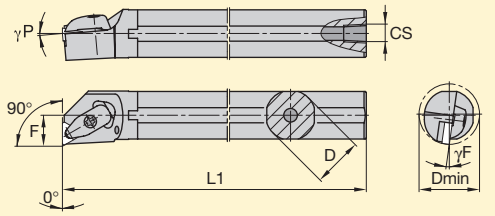
A-DSKN-KC 15°

Steel shank with through coolant



A-DTFN-KC 0°

Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L2	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx Plus	Clamp	Slotted Pin	Clamp Screw	Torx Plus
A16TDSKN R/L 3KC2	1.000	1.200	.640	12.00	-	.087	1/4-18 NPT	-10.0	-5.0	**SN..322**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDSKN R/L 3KC2	1.250	1.470	.765	14.00	-	.087	1/4-18 NPT	-10.0	-5.0	**SN..322**	**ISSN332**	**KMSP315IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A16TDSKN R/L 4KC3	1.000	1.200	.640	12.00	-	.119	1/4-18 NPT	-12.0	-5.0	**SN..432**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDSKN R/L 4KC3	1.250	1.470	.765	14.00	-	.118	1/4-18 NPT	-14.0	-5.0	**SN..432**	**ISSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDSKN R/L 4KC3	1.500	1.470	.890	14.00	-	.119	1/4-18 NPT	-10.0	-5.0	**SN..432**	**ISSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A28UDSKN R/L 4KC3	1.750	2.010	1.015	14.00	-	.119	1/4-18 NPT	-10.0	-5.0	**SN..432**	**ISSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDSKN R/L 6KC4	2.000	2.400	1.281	16.00	-	.178	1/4-18 NPT	-12.0	-5.0	**SN..643**	**ISSN633**	**KMSP625IP**	25IP	**CM210**	**SSP025018M**	**STCM425IP**	25IP
A40VDSKN R/L 6KC4	2.500	3.030	1.531	16.00	-	.179	1/4-18 NPT	-10.0	-5.0	**SN..643**	**ISSN633**	**KMSP625IP**	25IP	**CM210**	**SSP025018M**	**STCM425IP**	25IP
								γF°	γP°								
A16TDTFN R/L 3KC3	1.000	1.300	.750	12.00	-	-	1/4-18 NPT	-12.0	-5.0	**TN..332**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A20UDTFN R/L 3KC3	1.250	1.705	1.000	14.00	-	-	1/4-18 NPT	-12.0	-5.0	**TN..332**	-	-	-	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDTFN R/L 3KC3	1.500	2.000	1.125	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A28UDTFN R/L 3KC3	1.750	2.250	1.250	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**ITSN323**	**KMSP315IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A24UDTFN R/L 4KC3	1.500	2.000	1.125	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**TN..432**	**ITSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A28UDTFN R/L 4KC3	1.750	2.250	1.250	14.00	-	-	1/4-18 NPT	-10.0	-5.0	**TN..432**	**ITSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A32VDTFN R/L 4KC3	2.000	2.500	1.375	16.00	-	-	1/4-18 NPT	-8.0	-5.0	**TN..432**	**ITSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP
A40VDTFN R/L 4KC3	2.500	3.030	1.531	16.00	-	-	1/4-18 NPT	-6.0	-5.0	**TN..432**	**ITSN433**	**KMSP415IP**	15IP	**CM234**	**SSP025016M**	**STCM1115IP**	15IP

Order example:
Right hand: **A16TDSKNR3KC2**

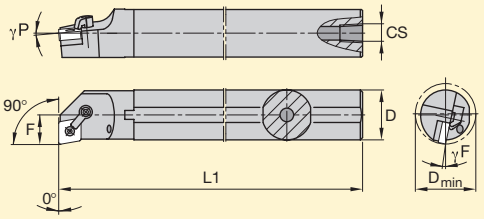
Left hand: **A16TDSKNL3KC2**

KENLOC Boring Bars

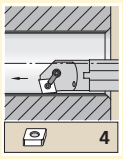
KENLOC Inserts

A-MCFN 0°

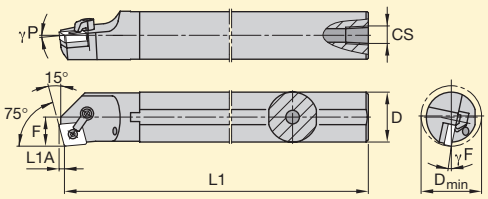
Steel shank with through coolant



A-MCKN 15°

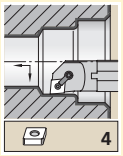


Steel shank with through coolant

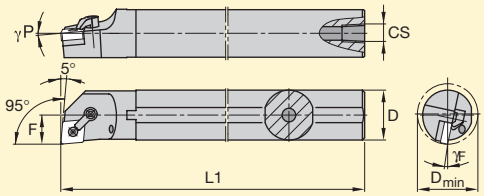


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16MCFN R/L 4	1.000	1.200	.640	12.00	-	1/4-18 NPT	-14.0	-5.0	**CN..432**	**-**	**KL44**	-	**CK7**	**STC9**	3/32
A20MCFN R/L 4	1.250	1.470	.765	14.00	-	1/4-18 NPT	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A24MCFN R/L 4	1.500	1.760	.890	14.00	-	1/4-18 NPT	-10.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A32MCFN R/L 5	2.000	2.400	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
							γF°	γP°							
A20MCKN R/L 4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24MCKN R/L 4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MCKN R/L 4	2.000	2.400	1.281	16.00	.12	1/4-18 NPT	-8.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MCKN R/L 5	2.000	2.400	1.281	16.00	.15	1/4-18 NPT	-10.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32

A-MCLN -5°



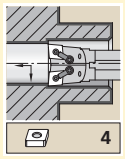
Steel shank with through coolant



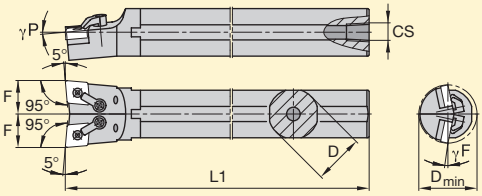
Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16MCLN R/L 3	1.000	1.200	.640	12.00	-	1/4-18 NPT	-10.0	-5.0	**CN..322**	**-**	**KL33**	5/64	**CK6**	**STC5**	3/32
A16MCLN R/L 4	1.000	1.200	.640	12.00	-	1/4-18 NPT	-14.0	-5.0	**CN..432**	**-**	**KL44**	3/32	**CK20**	**STC11**	1/8
A20MCLN R/L 4	1.250	1.470	.765	14.00	-	1/4-18 NPT	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24MCLN R/L 4	1.500	1.760	.890	14.00	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A28MCLN R/L 4	1.750	2.010	1.015	14.00	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MCLN R/L 4	2.000	2.400	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A40MCLN R/L 4	2.500	3.030	1.531	16.00	-	1/4-18 NPT	-8.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24MCLN R/L 5	1.500	1.760	.890	14.00	-	1/4-18 NPT	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
A32MCLN R/L 5	2.000	2.400	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
A40MCLN R/L 5	2.500	3.030	1.531	16.00	-	1/4-18 NPT	-8.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
A32MCLN R/L 6	2.000	2.400	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
A40MCLN R/L 6	2.500	3.030	1.531	16.00	-	1/4-18 NPT	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

Order example:
Right hand: **A16MCFNR4**
Left hand: **A16MCFNL4**

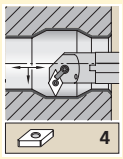
A-MCLN-D -5°



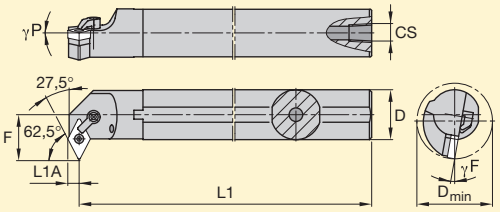
Steel shank with through coolant



A-MDPN 27.5°

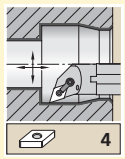


Steel shank with through coolant

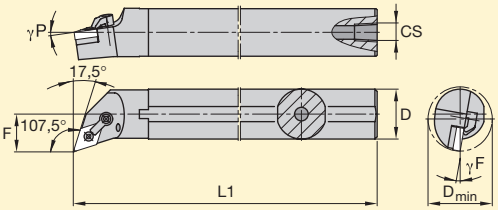


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16MCLNR4D	1.000	1.625	.640	12.00	-	1/4-18 NPT	-10.0	-5.0	**CN..432**	**-**	**KL44**	-	**CK7**	**STC9**	3/32
A20MCLNR4D	1.250	1.875	.765	14.00	-	1/4-18 NPT	-10.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24MCLNR4D	1.500	2.125	.890	14.00	-	1/4-18 NPT	-10.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MCLNR4D	2.000	2.592	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MCLNR5D	2.000	2.592	1.281	16.00	-	1/4-18 NPT	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
							γF°	γP°							
A20MDPN R/L 4	1.250	1.705	1.000	14.00	.26	1/4-18 NPT	-13.0	0.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
A24MDPN R/L 4	1.500	2.000	1.125	14.00	.26	1/4-18 NPT	-10.0	0.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8

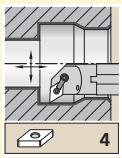
A-MDQN -17.5°



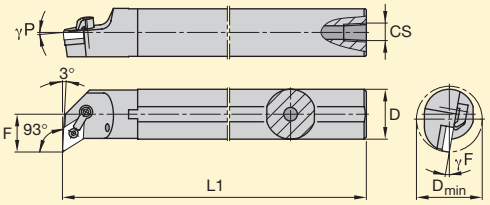
Steel shank with through coolant



A-MDUN -3°



Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A20MDQN R/L 4	1.250	1.705	1.000	14.00	-	1/4-18 NPT	-12.0	-10.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A24MDQN R/L 4	1.500	2.000	1.125	14.00	-	1/4-18 NPT	-8.5	-8.5	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
							γF°	γP°							
A16MDUN R/L 3	1.000	1.300	.750	12.00	-	1/4-18 NPT	-12.0	-5.0	**DN..332**	**-**	**KL33L**	5/64	**CK7**	**STC5**	3/32
A20MDUN R/L 4	1.250	1.705	1.000	14.00	-	1/4-18 NPT	-12.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A24MDUN R/L 4	1.500	2.000	1.125	14.00	-	1/4-18 NPT	-10.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A28MDUN R/L 4	1.750	2.250	1.250	14.00	-	1/4-18 NPT	-10.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A32MDUN R/L 4	2.000	2.500	1.375	16.00	-	1/4-18 NPT	-8.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32

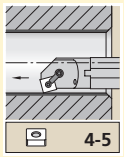
Order example:
Right hand: **AA20MDPNR4**

Left hand: **A20MDPNL4**

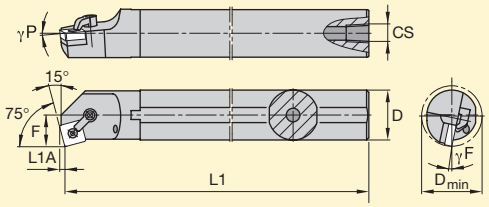
KENLOC Boring Bars

KENLOC Inserts

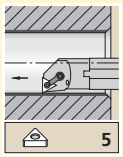
A-MSKN 15°



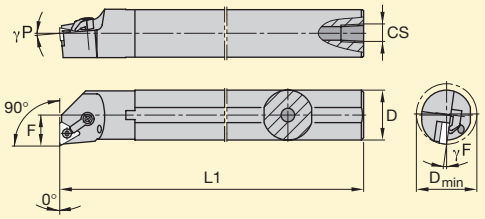
Steel shank with through coolant



A-MTFN 0°

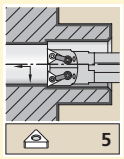


Steel shank with through coolant

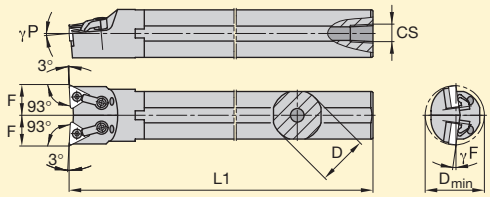


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A20MSKN R/L 4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	-5.0	**SN..432**	**-**	**KL44**	3/32	**CK9**	**STC4**	5/32
A24MSKN R/L 4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-10.0	-5.0	**SN..432**	**ISSN432**	**KL46**	3/32	**CK9**	**STC4**	5/32
A28MSKN R/L 4	1.750	2.010	1.015	14.00	.12	1/4-18 NPT	-10.0	-5.0	**SN..432**	**ISSN432**	**KL46**	3/32	**CK9**	**STC4**	5/32
A32MSKN R/L 6	2.000	2.400	1.281	16.00	.18	1/4-18 NPT	-12.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
A40MSKN R/L 6	2.500	3.030	1.531	16.00	.18	1/4-18 NPT	-10.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
							γF°	γP°							
A16MTFN R/L 3	1.000	1.220	.640	12.00	-	1/4-18 NPT	-12.0	-5.0	**TN..332**	**-**	**KL33L**	5/64	**CK7**	**STC9**	3/32
A20MTFN R/L 3	1.250	1.470	.765	14.00	-	1/4-18 NPT	-12.0	-5.0	**TN..332**	**-**	**KL33L**	5/64	**CK7**	**STC9**	3/32
A24MTFN R/L 3	1.500	1.760	.890	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A28MTFN R/L 3	1.750	2.010	1.015	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A24MTFN R/L 4	1.500	1.760	.890	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A28MTFN R/L 4	1.750	2.010	1.015	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A32MTFN R/L 4	2.000	2.400	1.281	16.00	-	1/4-18 NPT	-8.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A40MTFN R/L 4	2.500	3.030	1.531	16.00	-	1/4-18 NPT	-6.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32

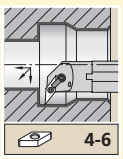
A-MTUN-D -3°



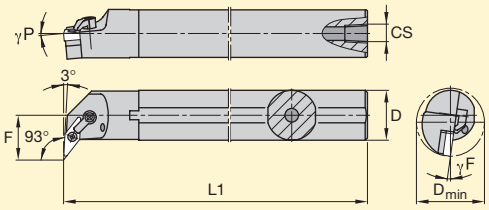
Steel shank with through coolant



A-MVUN -3°



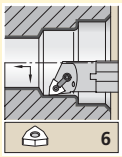
Steel shank with through coolant

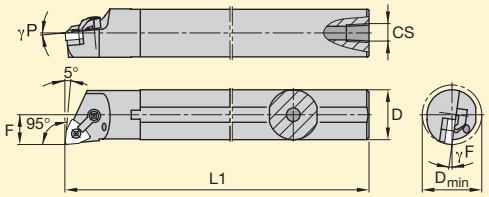


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16MTUNR3D	1.000	1.312	.640	12.00	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**-**	**KL33L**	5/64	**CK7**	**STC9**	3/32
A20MTUNR3D	1.250	1.550	.765	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**-**	**KL33L**	5/64	**CK7**	**STC9**	3/32
A24MTUNR3D	1.500	1.810	.890	14.00	-	1/4-18 NPT	-10.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A32MTUNR3D	2.000	2.592	1.281	16.00	-	1/4-18 NPT	-8.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC5**	3/32
A32MTUNR4D	2.000	2.592	1.281	16.00	-	1/4-18 NPT	-8.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
							γF°	γP°							
A20MVUN R/L 3	1.250	1.705	1.000	14.00	-	1/4-18 NPT	-12.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A24MVUN R/L 3	1.500	2.000	1.125	14.00	-	1/4-18 NPT	-12.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A32MVUN R/L 4	2.000	2.500	1.325	16.00	-	1/4-18 NPT	-10.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
A40MVUN R/L 4	2.500	3.250	1.750	16.00	-	1/4-18 NPT	-10.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32

Order example:
Right hand: **A20MSKNR4**
Left hand: **A20MSKNL4**

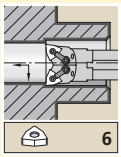
A-MWLN -5°

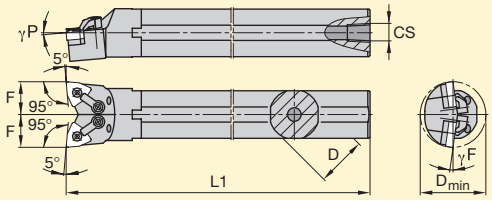




Steel shank with through coolant

A-MWLN-D -5°





Steel shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	F	L1	L1A	CS	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16MWLN R/L 3	1.000	1.200	.640	12.00	-	1/4-18 NPT	-12.0	-5.0	**WN..332**	**-**	**KL33L**	5/64	**CK6**	**STC5**	3/32
A24MWLN R/L 3	1.500	1.760	.890	14.00	-	1/4-18 NPT	-8.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
A16MWLN R/L 4	1.000	1.220	.640	12.00	-	1/4-18 NPT	-12.0	-5.0	**WN..432**	**-**	**KL44**	3/32	**CK20**	**STC11**	1/8
A20MWLN R/L 4	1.250	1.470	.765	14.00	-	1/4-18 NPT	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24MWLN R/L 4	1.500	1.760	.890	14.00	-	1/4-18 NPT	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
							γF°	γP°							
A16MWLNR3D	1.000	1.310	.640	12.00	-	1/4-18 NPT	-11.0	-5.0	**WN..332**	**-**	**KL33L**	5/64	**CK6**	**STC5**	3/32
A20MWLNR3D	1.250	1.560	.765	14.00	-	1/4-18 NPT	-10.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
A16MWLNR4D	1.000	1.420	.700	12.00	-	1/4-18 NPT	-12.0	-5.0	**WN..432**	**-**	**KL44**	3/32	**CK6**	**STC5**	3/32
A20MWLNR4D	1.250	1.550	.765	14.00	-	1/4-18 NPT	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK6**	**STC5**	3/32
A24MWLNR4D	1.500	1.810	.890	14.00	-	1/4-18 NPT	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A32MWLNR4D	2.000	2.582	1.276	16.00	-	1/4-18 NPT	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8

Order example:
Right hand: **A16MWLNR3**

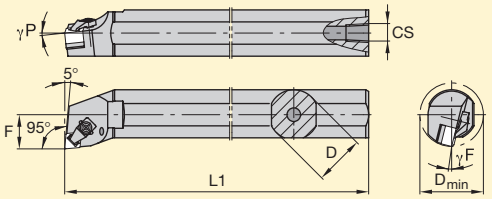
Left hand: **A16MWLNL3**

TOP NOTCH TURNING Boring Bars

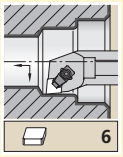
KENDEX negative Inserts

A-CCLN-MX -5°

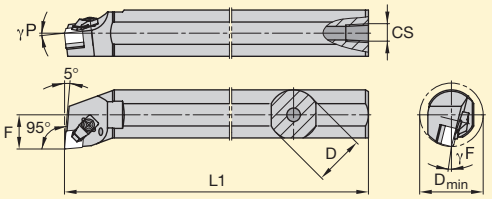
Steel shank with through coolant



A-CCLN-MN -5°

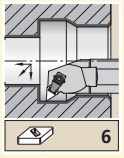


Steel shank with through coolant

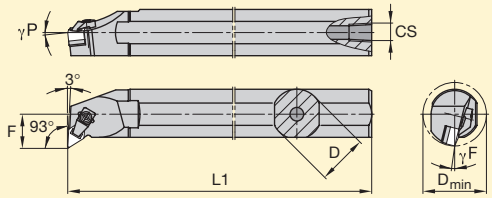


Catalog number Right hand/Left hand	D	Dmin	F	L1	L	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
A24CCLN R/L 4MX5	1.500	2.165	.890	14.00	-	-	1/4 - 18 NPT	-14.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
A32CCLN R/L 4MX5	2.000	2.323	1.281	16.00	-	-	1/4 - 18 NPT	-14.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
A40CCLN R/L 4MX5	2.500	3.030	1.531	16.00	-	-	1/4 - 18 NPT	-10.0	-5.0	**CN.X452**	**552.221**	**554.260**	T20	**551.326**	T25
								γF°	γP°						
A32CCLN R/L 4MN5	2.000	2.323	1.281	16.00	-	-	1/4-18 NPT	-14.0	-5.0	**CN.452**	**552.221**	**554.260**	T20	**551.327**	T25
A40CCLN R/L 4MN5	2.500	3.030	1.531	16.00	-	-	1/4-18 NPT	-10.0	-5.0	**CN.452**	**552.221**	**554.260**	T20	**551.327**	T25

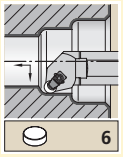
A-CDUN-MX -3°



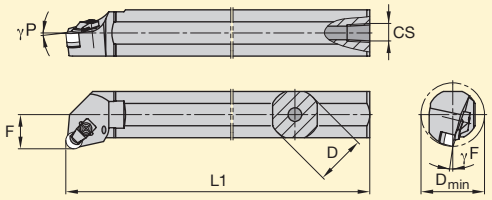
Steel shank with through coolant



A-CRGN-MN



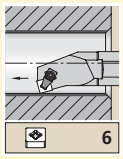
Steel shank with through coolant



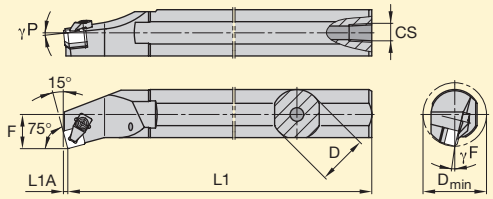
Catalog number Right hand/Left hand	D	Dmin	F	L1	L	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (mm) or Torx	Clamp Assembly	Torx
A24CDUN R/L 12MX5	1.500	2.165	1.125	14.00	-	-	1/4 - 18 NPT	-14.0	-5.0	**DN.X120708**	**552.225**	**554.254**	2.5	**551.326**	T25
A24CDUN R/L 4MX5	1.500	2.165	1.125	14.00	-	-	1/4 - 18 NPT	-14.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25
A32CDUN R/L 4MX5	2.000	2.400	1.375	16.00	-	-	1/4 - 18 NPT	-14.0	-5.0	**DN.X452**	**552.228**	**554.260**	T20	**551.342**	T25
								γF°	γP°						
A32CRGN R/L 4MN5	2.000	2.559	1.281	16.00	-	-	1/4-18 NPT	-14.0	-5.0	**RN.45**	**552.230**	**554.260**	T20	**551.343**	T25
A40CRGN R/L 4MN5	2.500	3.032	1.532	16.00	-	-	1/4-18 NPT	-12.0	-5.0	**RN.45**	**552.230**	**554.260**	T20	**551.343**	T25

Order example:
Right hand: **A24CCLNR4MX5**
Left hand: **A24CCLNL4MX5**

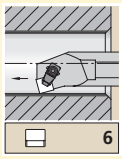
A-CSKN-MX 15°



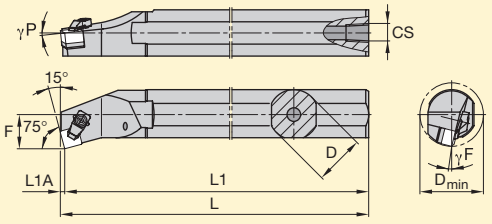
Steel shank with through coolant



A-CSKN-MN 15°

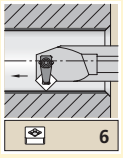


Steel shank with through coolant

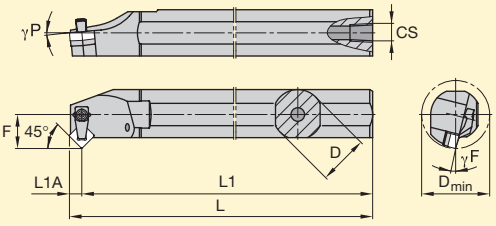


Catalog number Right hand/Left hand	D	Dmin	F	L1	L	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
A24CSKN R/L 4MX5	1.500	2.165	.890	14.00	-	.112	1/4 - 18 NPT	-14.0	-6.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
								γF°	γP°						
A32CSKN R/L 4MN5	2.000	2.323	1.281	16.00	16.11	.112	1/4-18 NPT	-14.0	-6.0	**SN.452**	**552.232**	**554.260**	T20	**551.327**	T25
A40CSKN R/L 4MN5	2.500	2.874	1.532	16.00	16.11	.112	1/4-18 NPT	-10.0	-6.0	**SN.452**	**552.232**	**554.260**	T20	**551.327**	T25

A-CSSN-MX 45°

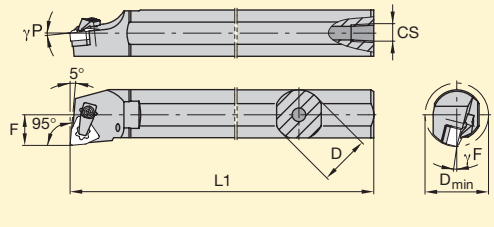


Steel shank with through coolant



A-CWLN-MX -5°

Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L	L1A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Torx	Clamp Assembly	Torx
A24CSSN R/L 4MX5	1.500	2.165	.890	14.00	14.34	.335	1/4 - 18 NPT	-14.0	-6.0	**SN.X452**	**552.232**	**554.260**	T20	**551.326**	T25
								γF°	γP°						
A24CWLN R/L 4MX5	1.500	3.150	.890	14.00	-	-	1/4 - 18 NPT	-10.0	-6.0	**WN.X452**	**552.210**	**554.260**	T20	**551.326**	T25
A32CWLN R/L 4MX5	2.000	3.150	1.280	16.00	-	-	1/4 - 18 NPT	-10.0	-6.0	**WN.X452**	**552.210**	**554.260**	T20	**551.326**	T25

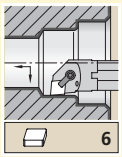
Order example:
Right hand: **A24CSKNR4MX5**

Left hand: **A24CSKNL4MX5**

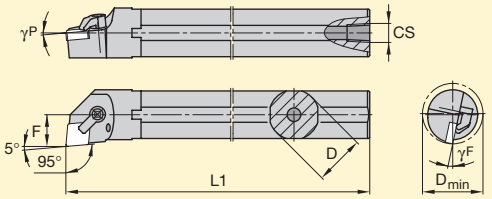
KENDEX Boring Bars

KENDEX negative polycrystalline Inserts

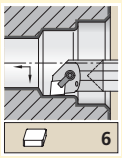
A-CCLN -5°



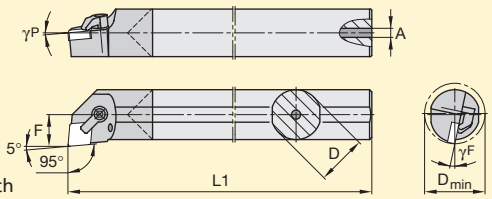
Steel shank with through coolant



E-CCLN -5°

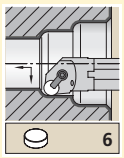


Carbide shank with through coolant

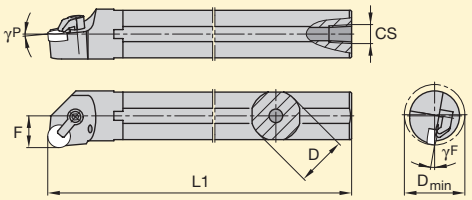


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A10CCLN R/L 3	.625	.770	.406	10.00	-	-	-	-	1/8-27 NPT	-12.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32
A12CCLN R/L 3	.750	.930	.500	10.00	-	-	-	-	1/8-27 NPT	-11.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32
A16CCLN R/L 3	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	-10.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32
										γF°	γP°							
E10CCLN R/L 3	.625	.770	.406	10.00	-	-	-	.22	-	-12.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32
E12CCLN R/L 3	.750	.930	.500	10.00	-	-	-	.28	-	-11.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32
E16CCLN R/L 3	1.000	1.200	.640	12.00	-	-	-	.16	-	-10.0	-5.0	**CN.322**	-	-	-	**CK7LP**	**STC9**	3/32

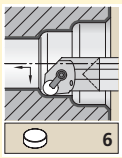
A-CRGN



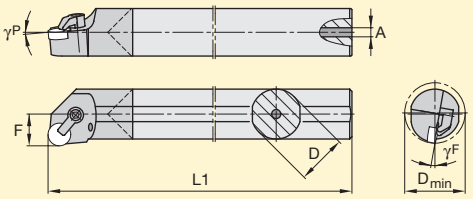
Steel shank with through coolant



E-CRGN



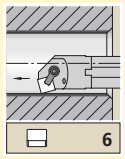
Carbide shank with through coolant



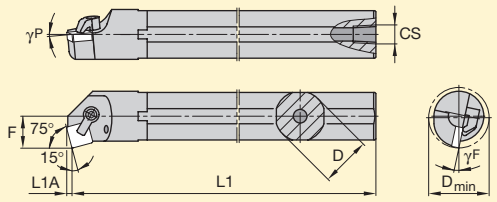
Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A10CRGN R/L 3	.625	.770	.406	10.00	-	-	-	-	1/8-27 NPT	-12.0	-5.0	**RN.32**	-	-	-	**CK7LP**	**STC9**	3/32
A12CRGN R/L 3	.750	.930	.500	10.00	-	-	-	-	1/8-27 NPT	-11.0	-5.0	**RN.32**	-	-	-	**CK7LP**	**STC9**	3/32
A16CRGN R/L 3	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	-10.0	-5.0	**RN.32**	-	-	-	**CK7LP**	**STC9**	3/32
A16CRGN R/L 4	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	-10.0	-5.0	**RN.42**	-	-	-	**CK7LP**	**STC9**	3/32
										γF°	γP°							
E10CRGN R/L 3	.625	.770	.406	10.00	-	-	-	.22	-	-12.0	-5.0	**RN.32**	-	-	-	**CK7LP**	**STC9**	3/32
E16CRGN R/L 3	1.000	1.200	.640	12.00	-	-	-	.31	-	-10.0	-5.0	**RN.32**	-	-	-	**CK7LP**	**STC9**	3/32
E12CRGN R/L 4	.750	.930	.500	10.00	-	-	-	.28	-	-11.0	-5.0	**RN.42**	-	-	-	**CK7LP**	**STC9**	3/32

Order example:
Right hand: **A10CCLNR3**
Left hand: **A10CCLNL3**

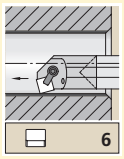
A-CSKN 15°



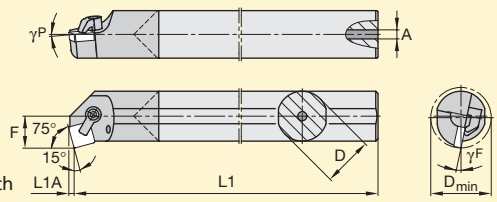
Steel shank with through coolant



E-CSKN 15°

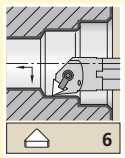


Carbide shank with through coolant

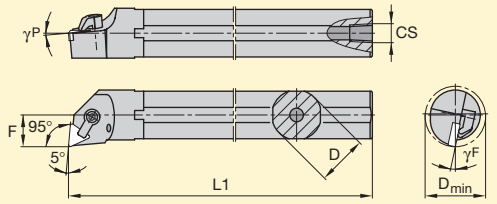


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A10CSKN R/L 3	.625	.770	.406	10.00	-	-	.087	-	1/8-27 NPT	-12.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32
A12CSKN R/L 3	.750	.930	.500	10.00	-	-	.087	-	1/8-27 NPT	-10.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32
A16CSKN R/L 3	1.000	1.200	.640	12.00	-	-	.087	-	1/4-18 NPT	-10.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32
										γF°	γP°							
E10CSKN R/L 3	.625	.770	.406	10.00	-	-	.087	.22	-	-12.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32
E12CSKN R/L 3	.750	.930	.500	10.00	-	-	.087	.28	-	-10.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32
E16CSKN R/L 3	1.000	1.190	.620	12.00	-	-	.087	.31	-	-10.0	-5.0	**SN.322**	-	-	-	**CK7LP**	**STC9**	3/32

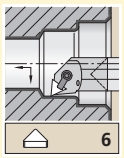
A-CTLN -5°



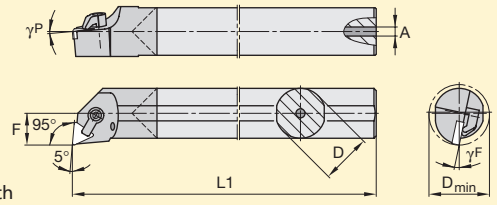
Steel shank with through coolant



E-CTLN -5°



Carbide shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A08CTLN R/L 2	.500	.600	.312	8.00	-	-	-	-	1/16-27 NPT	-14.0	-5.0	**TN.221**	-	-	-	**CK27**	**STC27**	5/64
A10CTLN R/L 2	.625	.770	.406	10.00	-	-	-	-	1/8-27 NPT	-12.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32
A12CTLN R/L 2	.750	.930	.500	10.00	-	-	-	-	1/8-27 NPT	-10.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32
A16CTLN R/L 2	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	-10.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32
										γF°	γP°							
E08CTLN R/L 2	.500	.600	.312	8.00	-	-	-	.19	-	-14.0	-5.0	**TN.221**	-	-	-	**CK27**	**STC27**	5/64
E10CTLN R/L 2	.625	.770	.406	10.00	-	-	-	.22	-	-12.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32
E12CTLN R/L 2	.750	.930	.500	10.00	-	-	-	.28	-	-10.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32
E16CTLN R/L 2	1.000	1.190	.620	12.00	-	-	-	.31	-	-10.0	-5.0	**TN.221**	-	-	-	**CK7LP**	**STC9**	3/32

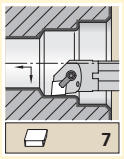
Order example:
Right hand: **A10CSKNR3**

Left hand: **A10CSKNL3**

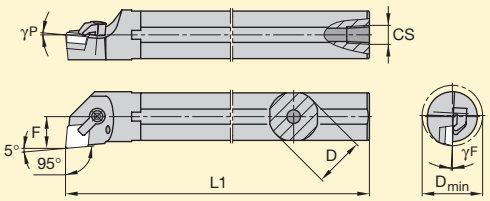
KENDEX Boring Bars

KENDEX positive Inserts

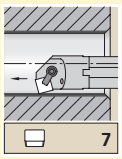
A-CCLP -5°



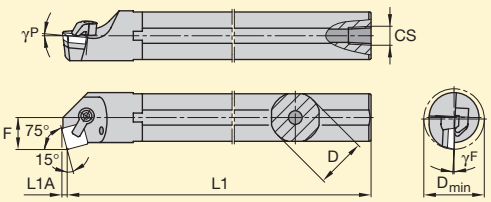
Steel shank with through coolant



A-CSKP 15°

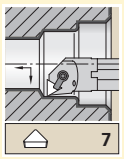


Steel shank with through coolant

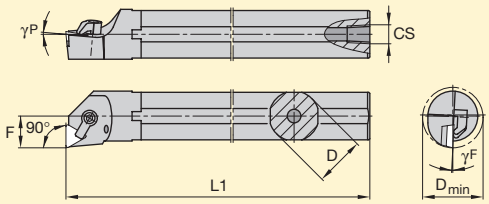


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A16CCLP R/L 4	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**CP.422**	**SM369**	**S19**	1/16	**CK20**	**STC11**	1/8
A24CCLP R/L 4	1.500	1.760	.890	14.00	-	-	-	-	1/4-18 NPT	0.0	5.0	**CP.422**	**SM369**	**S19**	1/16	**CK22**	**STC26**	1/8
A28CCLP R/L 4	1.750	2.010	1.015	14.00	-	-	-	-	1/4-18 NPT	0.0	5.0	**CP.422**	**SM369**	**S19**	1/16	**CK22**	**STC26**	1/8
										γF°	γP°							
A16CSKPR4	1.000	1.200	.640	12.00	-	-	.120	-	1/4-18 NPT	0.0	5.0	**SP.422**	**-**	**-**	-	**CK20**	**STC11**	1/8
A20CSKPR4	1.250	1.470	.765	14.00	-	-	.120	-	1/4-18 NPT	0.0	5.0	**SP.422**	**SM40**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CSKPR4	1.500	1.760	.890	14.00	-	-	.120	-	1/4-18 NPT	0.0	5.0	**SP.422**	**SM40**	**S19**	1/16	**CK10**	**STC8**	5/32
A28CSKPR4	1.750	2.010	1.015	14.00	-	-	.120	-	1/4-18 NPT	0.0	5.0	**SP.422**	**SM40**	**S19**	1/16	**CK10**	**STC8**	5/32

A-CTFP 0°



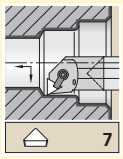
Steel shank with through coolant



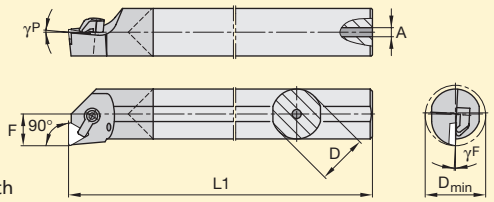
Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A06CTFP R/L 2	.375	.480	.250	6.00	-	-	-	.125	-	-3.0	5.0	**TP.2151**	**-**	**-**	-	**CK27**	**STC27**	5/64
A08CTFP R/L 2	.500	.600	.312	8.00	-	-	-	-	1/16-27 NPT	-3.0	5.0	**TP.221**	**-**	**-**	-	**CK27**	**STC27**	5/64
A10CTFP R/L 2	.625	.770	.406	10.00	-	-	-	-	1/8-27 NPT	-4.0	5.0	**TP.221**	**-**	**-**	-	**CK19**	**STC9**	3/32
A12CTFP R/L 3	.750	.930	.500	10.00	-	-	-	-	1/8-27 NPT	0.0	5.0	**TP.322**	**-**	**-**	-	**CK7**	**STC9**	3/32
A16CTFP R/L 3	1.000	1.200	.640	12.00	-	-	-	-	1/4-18 NPT	0.0	5.0	**TP.322**	**-**	**-**	-	**CK20**	**STC11**	1/8
A20CTFP R/L 3	1.250	1.470	.765	14.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.322**	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CTFP R/L 3	1.500	1.760	.890	14.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.322**	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A28CTFP R/L 3	1.750	2.010	1.015	14.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.322**	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CTFP R/L 4	1.500	1.760	.890	14.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
A28CTFP R/L 4	1.750	2.010	1.015	14.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
A32CTFP R/L 4	2.000	2.400	1.281	16.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
A40CTFP R/L 4	2.500	3.030	1.531	16.00	-	-	-	-	1/4-18 NPT	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32

Order example:
Right hand: **A16CCLPR4**
Left hand: **A16CCLPL4**

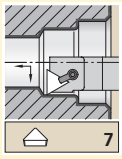
E-CTFP 0°



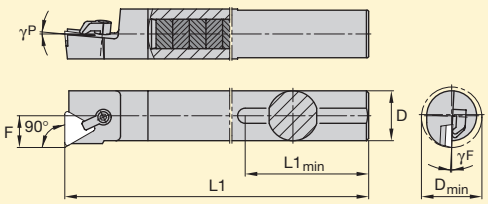
Carbide shank with through coolant



B-CTFP 0°

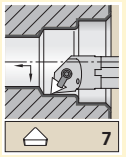


DeVibrator shank

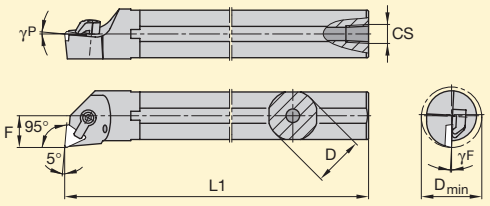


Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
E08KCTFP R/L 2	.500	.600	.312	5.00	-	-	-	.19	-	-3.0	5.0	**TP.221**	-	-	-	**CK27**	**STC27**	5/64
E08RCTFP R/L 2	.500	.600	.312	8.00	-	-	-	.19	-	-3.0	5.0	**TP.221**	-	-	-	**CK27**	**STC27**	5/64
E10SCTFP R/L 2	.625	.770	.406	10.00	-	-	-	.22	-	0.0	5.0	**TP.221**	-	-	-	**CK19**	**STC9**	3/32
E10MCTFP R/L 2	.625	.770	.406	6.00	-	-	-	.22	-	0.0	5.0	**TP.221**	-	-	-	**CK19**	**STC9**	3/32
E12SCTFP R/L 3	.750	.930	.500	10.00	-	-	-	.28	-	0.0	5.0	**TP.322**	-	-	-	**CK7**	**STC9**	3/32
E12QCTFP R/L 3	.750	.930	.500	7.00	-	-	-	.28	-	0.0	5.0	**TP.322**	-	-	-	**CK7**	**STC9**	3/32
E16TCTFP R/L 3	1.000	1.200	.640	12.00	-	-	-	.31	-	0.0	5.0	**TP.322**	-	-	-	**CK20**	**STC11**	1/8
										γF°	γP°							
B10CTFPR2	.625	.770	.406	10.00	5.25	-	-	-	-	0.0	5.0	**TP.221**	-	-	-	**CK19**	**STC9**	3/32
B12CTFPR3	.750	.930	.500	10.00	5.75	-	-	-	-	0.0	5.0	**TP.322**	-	-	-	**CK7**	**STC9**	3/32
B14CTFPR3	.875	1.060	.516	10.00	6.25	-	-	-	-	0.0	5.0	**TP.322**	-	-	-	**CK20**	**STC11**	1/8
B16CTFPR3	1.000	1.200	.640	12.00	6.50	-	-	-	-	0.0	5.0	**TP.322**	-	-	-	**CK20**	**STC11**	1/8
B20CTFPR3	1.250	1.470	.765	14.00	8.25	-	-	-	-	-3.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
B24CTFPR4	1.500	1.760	.890	15.50	9.75	-	-	-	-	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
B28CTFPR4	1.750	2.010	1.015	18.50	10.75	-	-	-	-	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
B32CTFPR4	2.000	2.400	1.281	21.50	12.25	-	-	-	-	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
B40CTFPR4	2.500	3.030	1.531	27.50	14.25	-	-	-	-	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32

A-CTLP -5°



Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	F	L1	L1min	L2	L1A	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
A06CTLP R/L 2	.375	.480	.250	6.00	-	-	-	.125	-	-3.0	5.0	**TP.2151**	-	-	-	**CK27**	**STC27**	5/64
A08CTLP R/L 2	.500	.600	.312	8.00	-	-	-	-	1/16-27 NPT	-3.0	5.0	**TP.221**	-	-	-	**CK27**	**STC27**	5/64
A12CTLP R/L 3	.750	.930	.500	10.00	-	-	-	-	1/8-27 NPT	0.0	5.0	**TP.322**	-	-	-	**CK7**	**STC9**	3/32
A16CTLP R/L 3	1.000	1.220	.640	12.00	-	-	-	-	1/4-18 NPT	0.0	5.0	**TP.322**	-	-	-	**CK20**	**STC11**	1/8

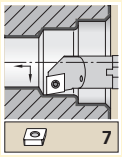
Order example:
Right hand: **E08KCTFPR2**

Left hand: **E08KCTFPL2**

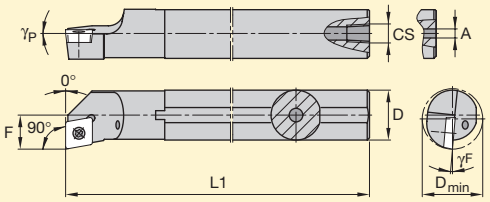
SCREW-ON Boring Bars

SCREW-ON Inserts

A-SCFC 0°

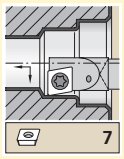


Steel shank with
through coolant

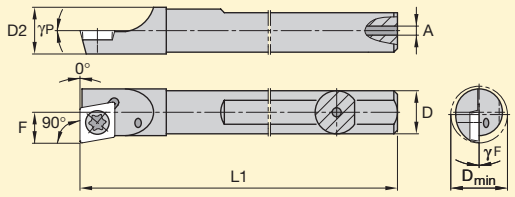


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06SCFC R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-8.0	0.0	**CC..2151**	**MS1153**	T7
A08SCFC R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-7.0	0.0	**CC..2151**	**MS1153**	T7
A10SCFC R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**CC..2151**	**MS1153**	T7
A12SCFC R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**CC..3252**	**MS1155**	T15
A16SCFC R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-4.0	0.0	**CC..3252**	**MS1155**	T15

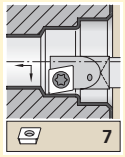
A-SCFD 0°



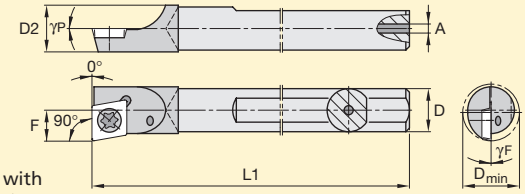
Steel shank with
through coolant



E-SCFD 0°



Carbide shank with
through coolant

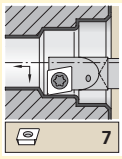


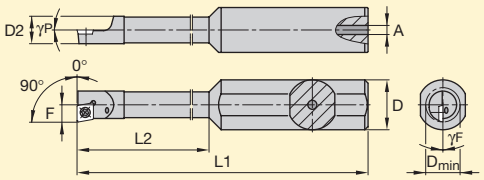
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03XSCFDR12	.188	.234	.203	.122	2.50	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A04FSCFDR12	.250	.292	.260	.152	3.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
													γF°	γP°			
E03HSCFD R/L 12	.188	.224	.193	.117	4.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E03MSCFD R/L 12	.188	.224	.193	.117	6.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E04HSCFD R/L 12	.250	.292	.258	.152	4.00	-	-	-	-	.047	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E04MSCFD R/L 12	.250	.292	.258	.152	6.00	-	-	-	-	.047	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E05MSCFD R/L 12	.312	.356	.322	.185	6.00	-	-	-	-	.093	-	-	0.0	5.0	**CD..120605**	**CC11**	T6

Order example:
Right hand: **A06SCFCR2**

Left hand: **A06SCFCL2**

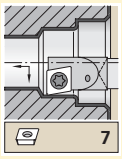
A-SCFD 0°

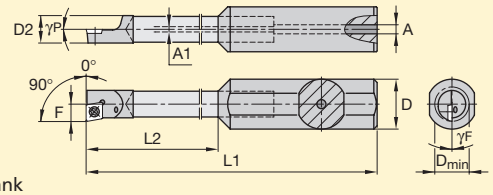




Necked steel shank
with through coolant

E-SCFD 0°

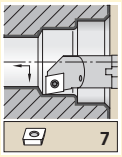




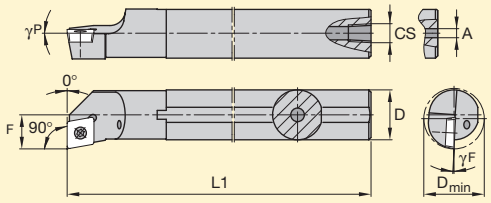
Necked carbide shank
with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A3206XSCFD R/L 1205	.375	.234	.203	.122	2.500	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A3206XSCFD R/L 121	.375	.234	.203	.122	2.500	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0406XSCFD R/L 12075	.375	.292	.260	.152	2.500	-	.750	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0406XSCFD R/L 12125	.375	.292	.260	.152	2.500	-	1.250	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A3208XSCFD R/L 1205	.500	.234	.203	.122	2.750	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A3208XSCFD R/L 121	.500	.234	.203	.122	2.750	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0408XSCFD R/L 12075	.500	.292	.260	.152	2.750	-	.750	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0408XSCFD R/L 12125	.500	.292	.260	.152	2.750	-	1.250	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E3208XSCFDR121	.500	.240	.210	.125	2.500	-	1.000	-	-	.125	.040	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3208GSCFDR122	.500	.240	.210	.125	3.500	-	2.000	-	-	.125	.040	-	0.0	5.0	**CD..120605**	**CC09**	T6
E0408XSCFD R/L 12125	.500	.292	.258	.152	2.750	-	1.250	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E0408HSCFDR12225	.500	.292	.258	.152	4.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E3210HSCFD R/L 121	.625	.240	.210	.125	3.500	-	1.000	-	-	.125	.040	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3210KSCFD R/L 122	.625	.240	.210	.125	4.500	-	2.000	-	-	.125	.040	-	0.0	5.0	**CD..120605**	**CC09**	T6
E0410HSCFDR12125	.625	.292	.258	.152	3.750	-	1.250	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E0410XSCFDR12225	.625	.292	.258	.152	5.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6

A-SCFP 0°



Steel shank with
through coolant



Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06SCFP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-4.0	0.0	**CP..2151***	**MS1153**	T7
A08SCFP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-2.0	0.0	**CP..2151***	**MS1153**	T7
A10SCFP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	0.0	0.0	**CP..2151***	**MS1153**	T7
A12SCFP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..3252****	**MS1155**	T15
A16SCFP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**CP..3252****	**MS1155**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. CPMT/CPGT/CPGW-32.5_). 90° countersunk hole inserts (i.e. CPGM/CPGB-32.5_) do not fit this tool.

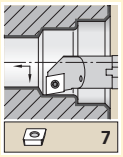
Order example:
Right hand: **A3206XSCFDR1205**

Left hand: **A3206XSCFDL1205**

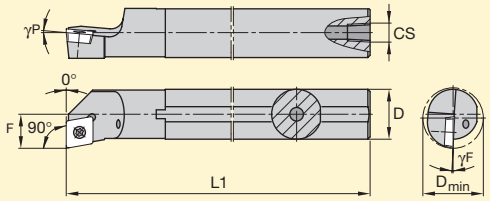
SCREW-ON Boring Bars

SCREW-ON Inserts

A-SCFP-A 0°



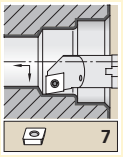
Steel shank with
through coolant



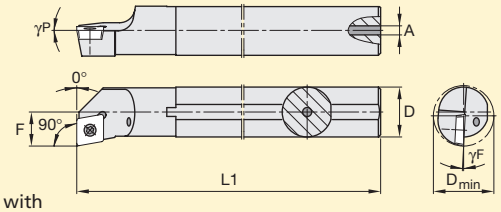
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A12SCFP R/L 3AP5	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-3.0	5.0	**CP..3252***	**MS1027**	T9
A16SCFP R/L 3AP5	1.000	1.190	-	.625	12.00	-	-	-	-	-	-	1/4-18 NPT	-3.0	5.0	**CP..3252***	**MS1027**	T9

*NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_).
ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

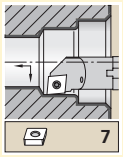
J-SCFP 0°



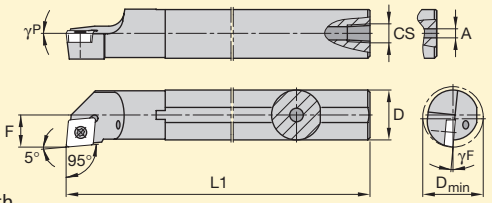
Heavy metal bar with
through coolant



A-SCLC -5°



Steel shank with
through coolant

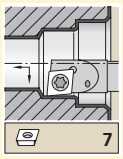


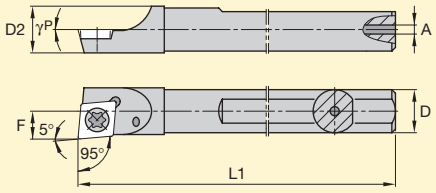
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
J06SCFP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-4.0	0.0	**CP..2151**	**MS1153**	T7
J08SCFP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**CP..2151**	**MS1153**	T7
J10SCFP R/L 2	.625	.770	-	.406	8.00	-	-	-	-	.16	-	-	0.0	0.0	**CP..2151**	**MS1153**	T7
J12SCFP R/L 3	.750	.930	-	.500	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**CP..3252**	**MS1155**	T15
J16SCFP R/L 3	1.000	1.200	-	.640	10.00	-	-	-	-	.25	-	-	0.0	0.0	**CP..3252**	**MS1155**	T15

													γF°	γP°			
A06SCLC R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.130	-	-	-8.0	0.0	**CC..2151**	**MS1153**	T7
A08SCLC R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-7.0	0.0	**CC..2151**	**MS1153**	T7
A10SCLC R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**CC..2151**	**MS1153**	T7
A10SCLC R/L 3	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-8.0	0.0	**CC..3252**	**MS1155**	T15
A12SCLC R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**CC..3252**	**MS1155**	T15
A16SCLC R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-4.0	0.0	**CC..3252**	**MS1155**	T15

Order example:
Right hand: **A12SCFPR3AP5**
Left hand: **A12SCFPL3AP5**

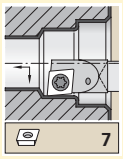
A-SCLD -5°

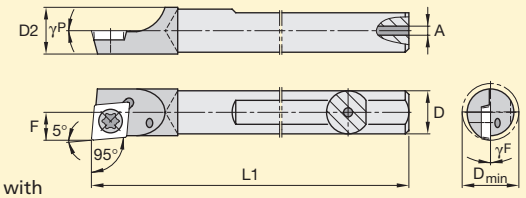




Steel shank with through coolant

E-SCLD -5°

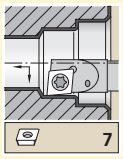


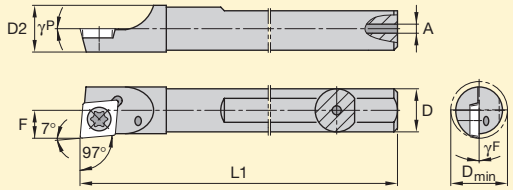


Carbide shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03XSCLD R/L 12A	.188	.204	.180	.104	2.50	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A03XSCLD R/L 12	.188	.230	.203	.116	2.50	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A04FSCLD R/L 12	.250	.285	.260	.145	3.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
													γF°	γP°			
E03HSCLD R/L 12	.188	.208	.189	.104	4.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
E03MSCLD R/L 12	.188	.208	.189	.104	6.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
E03HSCLD R/L 12A	.188	.218	.193	.111	4.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E03MSCLD R/L 12A	.188	.218	.193	.111	6.00	-	-	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E04HSCLD R/L 12	.250	.285	.258	.145	4.00	-	-	-	-	.047	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E04MSCLD R/L 12	.250	.285	.258	.145	6.00	-	-	-	-	.047	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E05MSCLD R/L 12	.312	.356	.322	.185	6.00	-	-	-	-	.093	-	-	0.0	5.0	**CD..120605**	**CC09**	T6

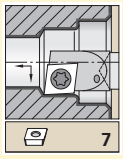
A-SC7D -7°

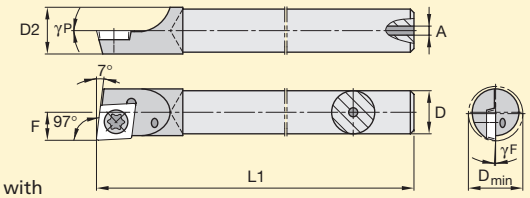




Steel shank with through coolant

E-SC7D -7°





Carbide shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03XSC7D R/L 12	.188	.180	.165	.095	2.50	-	-	-	-	.040	-	-	0.0	0.0	**CD..120605**	**CC09**	T6
													γF°	γP°			
E25MSC7D R/L 12	.156	.180	.165	.095	6.00	-	-	-	-	.039	-	-	0.0	0.0	**CD..120605**	**CC09**	T6

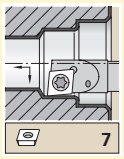
Order example:
Right hand: **A03XSC7DR12**

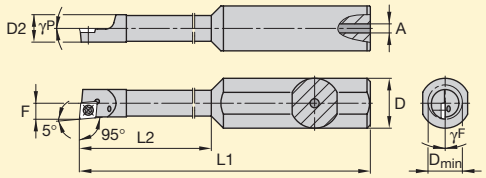
Left hand: **A03XSC7DL12**

SCREW-ON Boring Bars

SCREW-ON Inserts

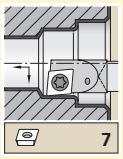
A-SCLD -5°

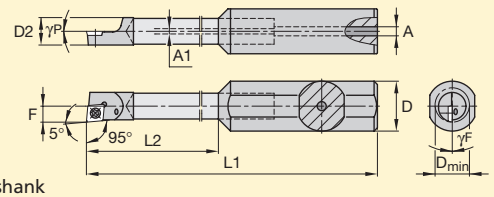




Necked steel shank
with through coolant

E-SCLD -5°

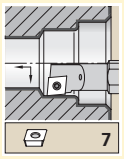


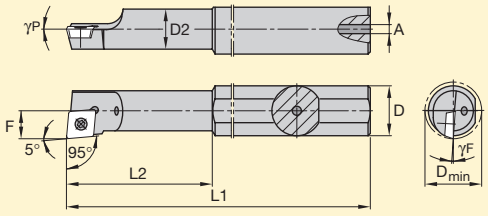


Necked carbide shank
with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A2906XSCLD R/L 1205	.375	.204	.180	.104	2.500	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A2906XSCLD R/L 121	.375	.204	.180	.104	2.500	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A3206XSCLD R/L 1205	.375	.228	.203	.116	2.500	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A3206XSCLD R/L 121	.375	.228	.203	.116	2.500	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0406XSCLD R/L 12075	.375	.285	.260	.145	2.500	-	.750	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0406XSCLD R/L 12125	.375	.285	.260	.145	2.500	-	1.250	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A2908XSCLD R/L 1205	.500	.204	.180	.104	2.750	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A2908XSCLD R/L 121	.500	.204	.180	.104	2.750	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC09**	T6
A3208XSCLD R/L 1205	.500	.228	.203	.116	2.750	-	.500	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A3208XSCLD R/L 121	.500	.228	.203	.116	2.750	-	1.000	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0408XSCLD R/L 12075	.500	.285	.260	.145	2.750	-	.750	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
A0408XSCLD R/L 12125	.500	.285	.260	.145	2.750	-	1.250	-	-	.040	-	-	0.0	5.0	**CD..120605**	**CC11**	T6
E2908XSCLD R/L 12088	.500	.208	.189	.104	2.375	-	.875	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E2908XSCLDR12188	.500	.208	.189	.104	3.375	-	1.875	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3208XSCLD R/L 121	.500	.234	.210	.119	2.500	-	1.000	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3208GSCLDR122	.500	.234	.210	.119	3.500	-	2.000	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E0408XSCLD R/L 12125	.500	.285	.258	.145	2.750	-	1.250	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E0408HSCLD R/L 1225	.500	.285	.258	.145	4.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E2910XSCLD R/L 12088	.625	.208	.189	.104	3.375	-	.875	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E2910XSCLD R/L 12188	.625	.208	.189	.104	4.375	-	1.875	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3210HSCLD R/L 121	.625	.234	.210	.119	3.500	-	1.000	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E3210KSCLD R/L 122	.625	.234	.210	.119	4.500	-	2.000	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC09**	T6
E0410HSCLD R/L 12125	.625	.285	.258	.145	3.750	-	1.250	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6
E0410XSCLD R/L 1225	.625	.285	.258	.145	5.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**CD..120605**	**CC11**	T6

A-SCLD -5°



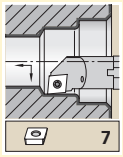


Necked steel shank
with through coolant

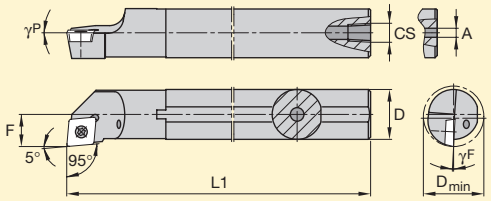
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A0306SCLD R/L 12	.375	.243	.193	.126	3.50	-	1.000	-	-	.078	-	-	-4.0	0.0	**CD..12061**	**MS1454**	T5
A0406SCLD R/L 12	.375	.300	.234	.156	4.00	-	1.250	-	-	.078	-	-	-1.0	0.0	**CD..12061**	**MS1454**	T5

Order example:
Right hand: **A2906XSCLDR1205**
Left hand: **A2906XSCLDL1205**

A-SCLP -5°



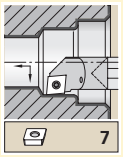
Steel shank with
through coolant



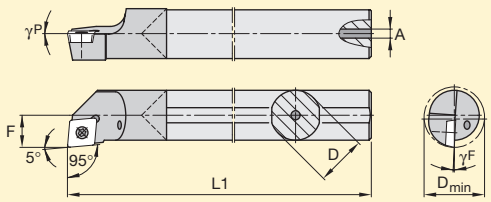
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06SCLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-6.0	0.0	**CP..2151***	**MS1153**	T7
A08SCLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-3.0	0.0	**CP..2151***	**MS1153**	T7
A10SCLP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..2151***	**MS1153**	T7
A10SCLP R/L 3	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..3252****	**MS1155**	T15
A12SCLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..3252****	**MS1155**	T15
A16SCLP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**CP..3252****	**MS1155**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. CPMT/CPGT/CPGW-32.5_).
90° countersunk hole inserts (i.e. CPGM/CPGB-32.5_) do not fit this tool.

E-SCLP -5°

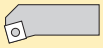


Carbide shank with
through coolant



Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
E05SCLP R/L 18	.313	.415	-	.219	5.00	-	-	-	-	.09	-	-	-5.0	0.0	**CP.18151**	**MS1152**	T7
E06SCLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-6.0	0.0	**CP..2151***	**MS1153**	T7
E08SCLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.19	-	-	-2.0	0.0	**CP..2151***	**MS1153**	T7
E10SCLP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	.22	-	-	-2.0	0.0	**CP..2151***	**MS1153**	T7
E12SCLP R/L 2	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-2.0	0.0	**CP..2151***	**MS1153**	T7
E10SCLP R/L 3	.625	.770	-	.406	10.00	-	-	-	-	.22	-	-	-2.0	0.0	**CP..3252****	**MS1155**	T15
E12SCLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-2.0	0.0	**CP..3252****	**MS1155**	T15
E16SCLP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	.31	-	-	0.0	0.0	**CP..3252****	**MS1155**	T15

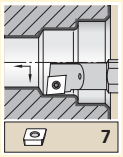
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. CPMT/CPGT/CPGW-32.5_).
90° countersunk hole inserts (i.e. CPGM/CPGB-32.5_) do not fit this tool.

Order example:
Right hand: **A06SCLPR2** 
Left hand: **A06SCLPL2**

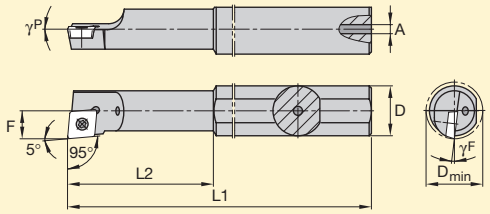
SCREW-ON Boring Bars

SCREW-ON Inserts

A-SCLP -5°

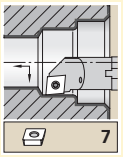


Necked steel shank
with through coolant

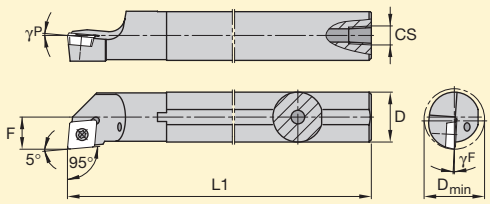


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A0506SCLP R/L 18	.375	.415	-	.219	5.00	-	1.63	-	-	.094	-	-	-7.0	0.0	**CP..18151**	**MS1152**	T7

A-SCLP-AP -5°



Steel shank with
through coolant

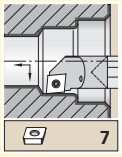


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A10SCLP R/L 3AP5	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-3.0	5.0	**CP..3252***	**MS1027**	T9
A12SCLP R/L 3AP5	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-3.0	5.0	**CP..3252***	**MS1027**	T9
A16SCLP R/L 3AP5	1.000	1.190	-	.625	12.00	-	-	-	-	-	-	1/4-18 NPT	-3.0	5.0	**CP..3252***	**MS1027**	T9

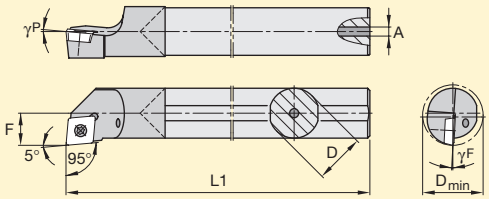
*NOTE: 90° countersunk hole insert (i.e. CPGM/CPGB-32.5_).
ANSI/ISO compatible 60° countersunk hole inserts (i.e. CPMT/CPGT/CPGW-32.5_) do not fit this tool.

Order example:
Right hand: **A0506SCLPR18**
Left hand: **A0506SCLPL18**

E-SCLP-AP -5°

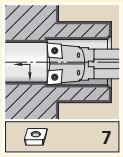


Carbide shank with through coolant

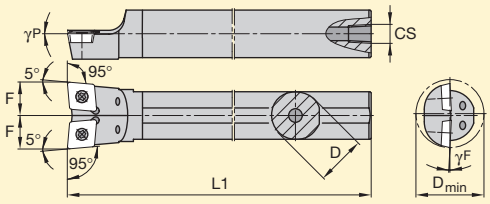


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
E12SCLP R/L 3AP5	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-3.0	5.0	**CP..3252**	**MS1027**	T9
E16SCLP R/L 3AP5	1.000	1.190	-	.625	12.00	-	-	-	-	.31	-	-	-3.0	5.0	**CP..3252**	**MS1027**	T9

A-SCLP-D -5°



Steel shank with through coolant



Catalog number	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
Right hand																	
A08SCLPR2D	.500	.650	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-3.0	0.0	**CP..2151***	**MS1153**	T7
A10SCLPR2D	.625	.842	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..2151***	**MS1153**	T7
A12SCLPR3D	.750	1.030	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**CP..3252****	**MS1155**	T15

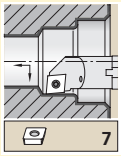
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. CPMT/CPGT/CPGW-32.5_).
90° countersunk hole inserts (i.e. CPGM/CPGB-32.5_) do not fit this tool.

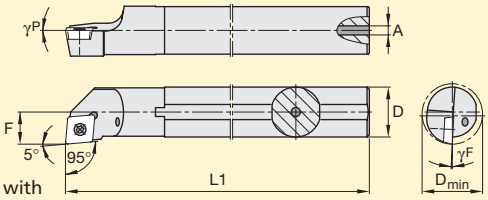
Order example:
Right hand: **E12SCLPR3AP5**
Left hand: **E12SCLPL3AP5**

SCREW-ON Boring Bars

SCREW-ON Inserts

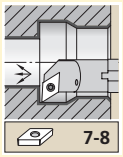
J-SCLP -5°

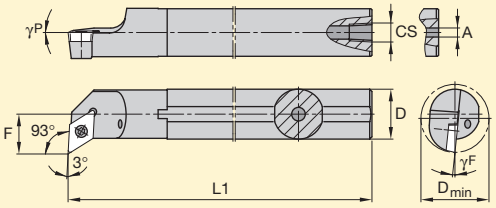




Heavy metal bar with through coolant

A-SDUC -3°

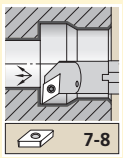


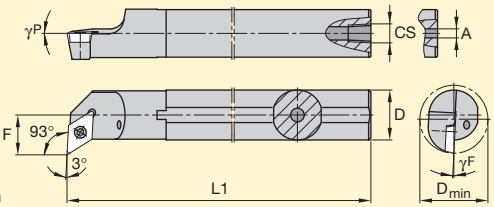


Steel shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
J05SCLP R/L 2	.313	.415	-	.219	6.00	-	-	-	-	.09	-	-	-6.0	0.0	**CP..2151**	**MS1939**	T7
J06SCLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-6.0	0.0	**CP..2151**	**MS1153**	T7
J08SCLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.16	-	-	-3.0	0.0	**CP..2151**	**MS1153**	T7
J10SCLP R/L 2	.625	.770	-	.406	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**CP..2151**	**MS1153**	T7
J10SCLP R/L 3	.625	.770	-	.406	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**CP..3252**	**MS1155**	T15
J12SCLP R/L 3	.750	.930	-	.500	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**CP..3252**	**MS1155**	T15
J16SCLP R/L 3	1.000	1.200	-	.640	10.00	-	-	-	-	.25	-	-	0.0	0.0	**CP..3252**	**MS1155**	T15
													γF°	γP°			
A06SDUC R/L 2	.375	.600	-	.375	6.00	-	-	-	-	.130	-	-	-7.0	0.0	**DC..2151**	**MS1153**	T7
A08SDUC R/L 2	.500	.730	-	.437	8.00	-	-	-	-	-	-	1/16-27 NPT	-5.0	0.0	**DC..2151**	**MS1153**	T7
A10SDUC R/L 2	.625	.850	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-4.0	0.0	**DC..2151**	**MS1153**	T7
A12SDUC R/L 3	.750	.980	-	.562	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**DC..3252**	**MS1155**	T15
A16SDUC R/L 3	1.000	1.300	-	.750	12.00	-	-	-	-	-	-	1/4-18 NPT	-3.0	0.0	**DC..3252**	**MS1155**	T15

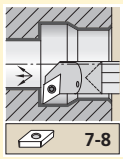
A-SDUP -3°

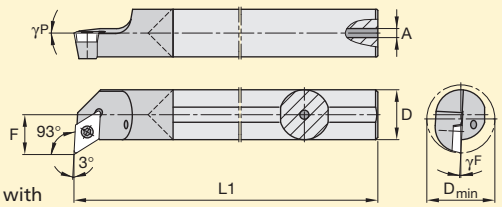




Steel shank with through coolant

E-SDUP -3°





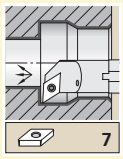
Carbide shank with through coolant

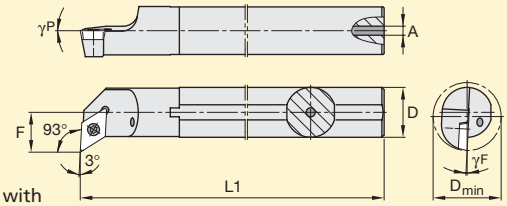
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06SDUP R/L 2	.375	.600	-	.375	6.00	-	-	-	-	.125	-	-	-3.0	0.0	**DP..2151**	**MS1153**	T7
A08SDUP R/L 2	.500	.730	-	.437	8.00	-	-	-	-	-	-	1/16-27 NPT	0.0	0.0	**DP..2151**	**MS1153**	T7
A10SDUP R/L 2	.625	.850	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	0.0	0.0	**DP..2151**	**MS1153**	T7
A12SDUP R/L 3	.750	.980	-	.562	10.00	-	-	-	-	-	-	1/8-27 NPT	0.0	0.0	**DP..3252**	**MS1155**	T15
A16SDUP R/L 3	1.000	1.300	-	.750	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**DP..3252**	**MS1155**	T15
													γF°	γP°			
E06SDUP R/L 2	.375	.600	-	.375	6.00	-	-	-	-	.13	-	-	-2.0	0.0	**DP..2151**	**MS1153**	T7
E08SDUP R/L 2	.500	.730	-	.437	8.00	-	-	-	-	.19	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7
E10SDUP R/L 2	.625	.850	-	.500	10.00	-	-	-	-	.22	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7
E12SDUP R/L 2	.750	.980	-	.562	10.00	-	-	-	-	.28	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7
E12SDUP R/L 3	.750	.980	-	.562	10.00	-	-	-	-	.28	-	-	0.0	0.0	**DP..3252**	**MS1155**	T15
E16SDUP R/L 3	1.000	1.300	-	.750	12.00	-	-	-	-	.31	-	-	0.0	0.0	**DP..3252**	**MS1155**	T15

Order example:
Right hand: **J05SCLPR2**

Left hand: **J05SCLPL2**

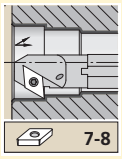
J-SDUP -3°

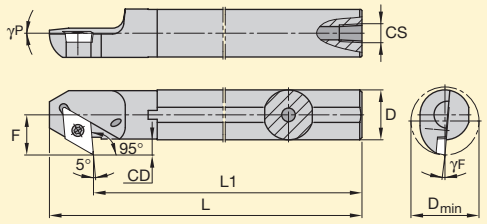




Heavy metal bar with through coolant

A-SDXC -5°

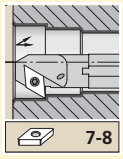


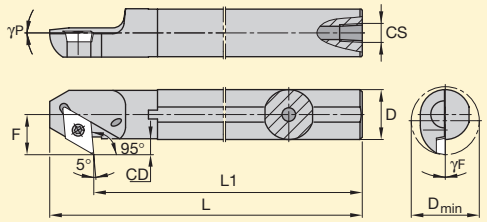


Steel shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
J06SDUP R/L 2	.375	.600	-	.375	6.00	-	-	-	-	.13	-	-	-3.0	0.0	**DP..2151**	**MS1153**	T7
J08SDUP R/L 2	.500	.730	-	.437	8.00	-	-	-	-	.16	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7
J10SDUP R/L 2	.625	.850	-	.500	8.00	-	-	-	-	.16	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7
J12SDUP R/L 3	.750	.980	-	.562	8.00	-	-	-	-	.16	-	-	0.0	0.0	**DP..3252**	**MS1155**	T15
													γF°	γP°			
A08SDXC R/L 2	.500	.730	-	.437	8.00	8.50	-	.187	-	-	-	1/16-27 NPT	-6.0	0.0	**DC..2151**	**MS1153**	T7
A10SDXC R/L 2	.625	.850	-	.500	10.00	10.50	-	.187	-	-	-	1/8-27 NPT	-5.0	0.0	**DC..2151**	**MS1153**	T7
A12SDXC R(L 3	.750	.980	-	.562	10.00	10.63	-	.187	-	-	-	1/8-27 NPT	-5.0	0.0	**DC..3252**	**MS1155**	T15
A16SDXC R/L 3	1.000	1.300	-	.750	12.00	12.63	-	.187	-	-	-	1/4-18 NPT	-3.0	0.0	**DC..3252**	**MS1155**	T15

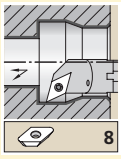
A-SDXP -5°

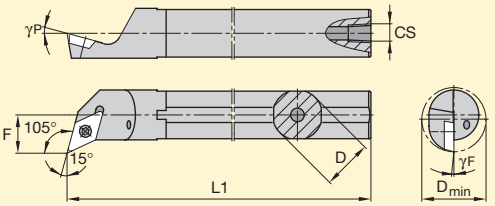




Steel shank with through coolant

A-SFKF -15°





Steel shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A08SDXP R/L 2	.500	.730	-	.437	8.00	8.50	-	.187	-	-	-	1/16-27 NP-	0.0	0.0	**DP..2151**	**MS1153**	T7
A10SDXP R/L 2	.625	.850	-	.500	10.00	10.50	-	.187	-	-	-	1/8-27 NP-	0.0	0.0	**DP..2151**	**MS1153**	T7
A12SDXP R/L 3	.750	.980	-	.562	10.00	10.75	-	.187	-	-	-	1/8-27 NP-	0.0	0.0	**DP..3252**	**MS1155**	T15
A16SDXP R/L 3	1.000	1.300	-	.750	12.00	12.75	-	.250	-	-	-	1/4-18 NP-	0.0	0.0	**DP..3252**	**MS1155**	T15
													γF°	γP°			
A24SFKFRW5	1.500	1.725	-	.890	14.00	-	-	-	-	-	-	1/4-18 NPT	0.0	15.0	**FF..533R**	**MS1129**	T15
A24SFKFLW5	1.500	1.725	-	.890	14.00	-	-	-	-	-	-	1/4-18 NPT	0.0	15.0	**FF..533L**	**MS1129**	T15

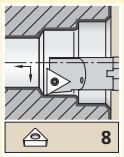
Order example:
Right hand: **J06SDUPR2**

Left hand: **J06SDUPL2**

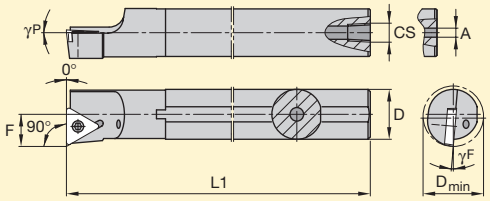
SCREW-ON Boring Bars

SCREW-ON Inserts

A-STFC 0°

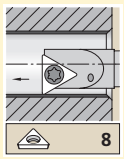


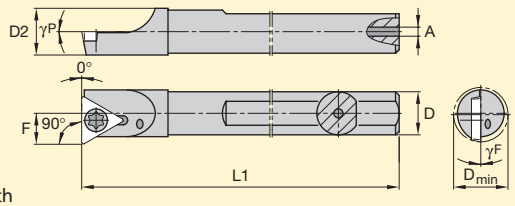
Steel shank with through coolant



Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06STFC R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.130	-	-	-8.0	0.0	**TC..2151**	**MS1153**	T7
A08STFC R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-7.0	0.0	**TC..2151**	**MS1153**	T7
A10STFC R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**TC..2151**	**MS1153**	T7
A12STFC R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**TC..3252**	**MS1155**	T15
A16STFC R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-4.0	0.0	**TC..3252**	**MS1155**	T15

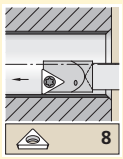
A-STFD 0°

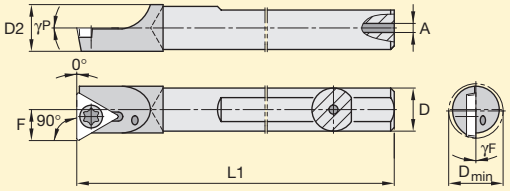




Steel shank with through coolant

E-STFD 0°



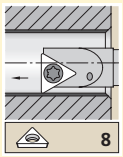


Carbide shank with through coolant

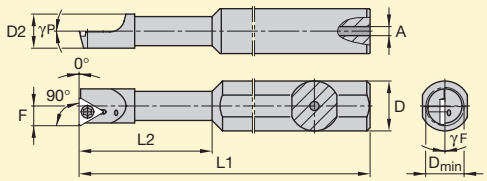
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03GSTFDR128	.188	.275	.197	.123	3.50	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807501**	**FC11**	T7
A04HSTFD R/L 128	.250	.296	.260	.156	4.00	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807501**	**FC14**	T7
A05HSTFD R/L 128	.312	.358	.322	.187	4.00	-	-	-	-	.060	-	-	0.0	5.0	**TD..12807501**	**FC14**	T7
													γF°	γP°			
E03HSTFD R/L 128	.188	.275	.203	.134	4.00	-	-	-	-	.040	-	-	0.0	0.0	**TD..12807505**	**FC11**	T7
E03MSTFD R/L 128	.188	.275	.203	.134	6.00	-	-	-	-	.040	-	-	0.0	0.0	**TD..12807505**	**FC11**	T7
E04HSTFD R/L 128	.250	.300	.260	.156	4.00	-	-	-	-	.047	-	-	0.0	0.0	**TD..12807505**	**FC14**	T7
E04MSTFD R/L 128	.250	.300	.260	.156	6.00	-	-	-	-	.047	-	-	0.0	0.0	**TD..12807505**	**FC14**	T7
E05HSTFD R/L 128	.313	.360	.322	.187	4.00	-	-	-	-	.093	-	-	0.0	0.0	**TD..12807505**	**FC14**	T7
E05MSTFD R/L 128	.313	.360	.322	.187	6.00	-	-	-	-	.093	-	-	0.0	0.0	**TD..12807505**	**FC14**	T7

Order example:
Right hand: **A06STFCR2**
Left hand: **A06STFCL2**

A-STFD 0°

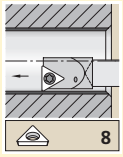


Necked steel shank
with through coolant

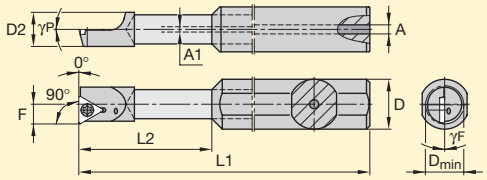


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A3208FSTFD R/L 12805	.500	.275	.203	.134	3.000	-	.500	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A3208FSTFD R/L 1281	.500	.275	.203	.134	3.000	-	1.000	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A0408FSTFD R/L 128075	.500	.296	.259	.156	3.000	-	.750	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0408FSTFD R/L 128125	.500	.296	.259	.156	3.000	-	1.250	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0508FSTFD R/L 1281	.500	.358	.321	.187	3.000	-	1.000	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0508FSTFD R/L 12815	.500	.358	.321	.187	3.000	-	1.500	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A3210HSTFD R/L 12805	.625	.275	.203	.134	4.000	-	.500	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A3210HSTFD R/L 1281	.625	.275	.203	.134	4.000	-	1.000	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A0410HSTFD R/L 128075	.625	.296	.259	.156	4.000	-	.750	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0410HSTFD R/L 128125	.625	.296	.259	.156	4.000	-	1.250	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0510HSTFD R/L 1281	.625	.358	.321	.187	4.000	-	1.000	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0510HSTFD R/L 12815	.625	.358	.321	.187	4.000	-	1.500	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7

E-STFD 0°



Necked carbide shank
with through coolant



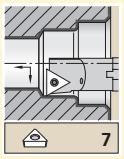
Catalog number	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
Right hand																	
E3208XSTFDR1281	.500	.275	.197	.134	2.500	-	1.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E3208GSTFDR1282	.500	.275	.197	.134	3.500	-	2.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0408XSTFDR128125	.500	.296	.250	.156	2.750	-	1.250	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0408HSTFDR12825	.500	.296	.250	.156	4.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0508FSTFDR12815	.500	.358	.312	.187	3.000	-	1.500	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0508XSTFDR128312	.500	.358	.312	.187	4.625	-	3.125	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0310HSTFDR1281	.625	.275	.197	.134	4.000	-	1.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0310KSTFDR1282	.625	.275	.197	.134	5.000	-	2.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0410HSTFDR128125	.625	.296	.250	.156	4.000	-	1.250	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0410XSTFDR12825	.625	.296	.250	.156	5.250	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0510HSTFDR12815	.625	.358	.312	.187	4.000	-	1.500	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0510XSTFDR128312	.625	.358	.312	.187	5.625	-	3.125	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7

Order example:
Right hand: **A3208FSTFDR12805**
Left hand: **A3208FSTFDL12805**

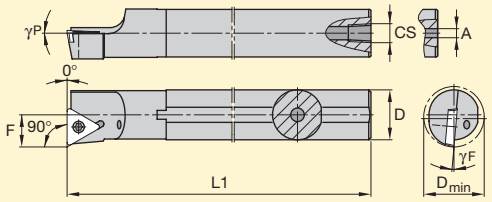
SCREW-ON Boring Bars

SCREW-ON Inserts

A-STFP 0°



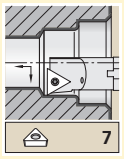
Steel shank with through coolant



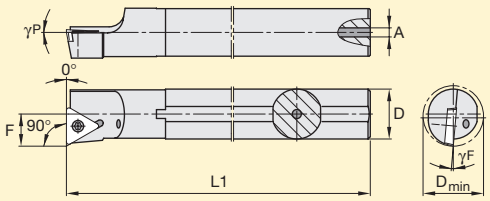
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A05STFP R/L 18	.313	.415	-	.219	5.00	-	-	-	-	.094	-	-	-8.0	0.0	**TP..18151**	**MS1933**	T7
A06STFP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-4.0	0.0	**TP..2151***	**MS1153**	T7
A08STFP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-2.0	0.0	**TP..2151**	**MS1153**	T7
A10STFP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	0.0	0.0	**TP..2151**	**MS1153**	T7
A12STFP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**TP..3252**	**MS1155**	T15
A16STFP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**TP..3252**	**MS1155**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.

J-STFP 0°



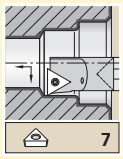
Heavy metal bar with through coolant



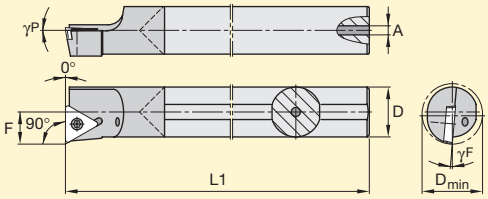
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
J06STFP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-4.0	0.0	**TP..2151**	**MS1153**	T7
J08STFP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**TP..2151**	**MS1153**	T7
J10STFP R/L 2	.625	.770	-	.406	8.00	-	-	-	-	.16	-	-	0.0	0.0	**TP..2151**	**MS1153**	T7
J12STFP R/L 3	.750	.930	-	.500	8.00	-	-	-	-	.16	-	-	-2.0	0.0	**TP..3252**	**MS1155**	T15

Order example:
Right hand: **A05STFPR18**
Left hand: **A05STFPL18**

E-STFP 0°



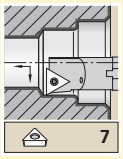
Carbide shank with through coolant



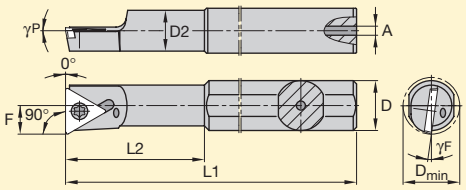
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
E05STFP R/L 18	.313	.415	-	.219	5.00	-	-	-	-	.09	-	-	-5.0	0.0	**TP..18151**	**MS1152**	T7
E06STFP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-4.0	0.0	**TP..2151***	**MS1153**	T7
E08STFP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.19	-	-	-2.0	0.0	**TP..2151***	**MS1153**	T7
E10STFP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	.22	-	-	0.0	0.0	**TP..2151***	**MS1153**	T7
E12STFP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-2.0	0.0	**TP..3252****	**MS1155**	T15
E16STFP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	.31	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. TPMT/TPGT/TPGW-32.5_).
90° countersunk hole inserts (i.e. TPGM/TPGB-32.5_) do not fit this tool.

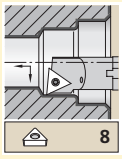
A-STFP 0°



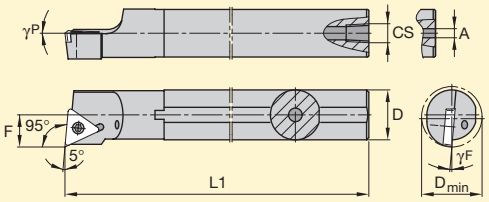
Necked steel shank with through coolant



A-STLC -5°



Steel shank with through coolant



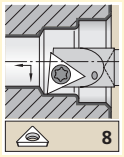
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A0506STFP R/L 18	.375	.415	.313	.219	5.00	-	1.625	-	-	.094	-	-	-8.0	0.0	**TP..18151**	**MS1152**	T7
													γF°	γP°			
A06STLC R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-8.0	0.0	**TC..2151**	**MS1153**	T7
A08STLC R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-7.0	0.0	**TC..2151**	**MS1153**	T7
A10STLC R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**TC..2151**	**MS1153**	T7
A12STLC R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**TC..3252**	**MS1155**	T15
A16STLC R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-4.0	0.0	**TC..3252**	**MS1155**	T15

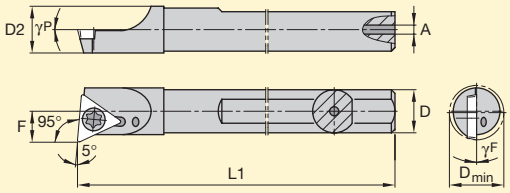
Order example:
Right hand: **E05STFPR18**
Left hand: **E05STFPL18**

SCREW-ON Boring Bars

SCREW-ON Inserts

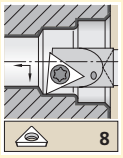
A-STLD -5°

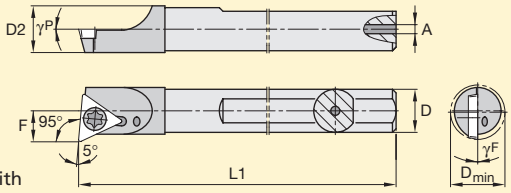




Steel shank with through coolant

E-STLD -5°



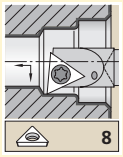


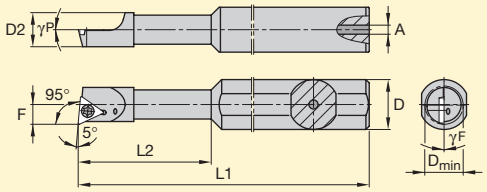
Carbide shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03GSTLD R/L 128	.187	.275	.197	.126	3.50	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A04HSTLD R/L 128	.250	.300	.260	.156	4.00	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A05HSTLD R/L 128	.312	.360	.322	.187	4.00	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
													γF°	γP°			
E03HSTLD R/L 128	.188	.275	.197	.126	4.00	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E03MSTLD R/L 128	.188	.275	.197	.126	6.00	-	-	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E04HSTLD R/L 128	.250	.300	.260	.156	4.00	-	-	-	-	.047	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E04MSTLD R/L 128	.250	.300	.260	.156	6.00	-	-	-	-	.047	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E05HSTLD R/L 128	.313	.360	.322	.187	4.00	-	-	-	-	.093	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E05MSTLD R/L 128	.313	.360	.322	.187	6.00	-	-	-	-	.093	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7

Order example:
Right hand: **A03GSTLDR128**
Left hand: **A03GSTLDL128**

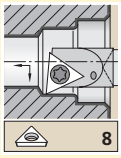
A-STLD -5°

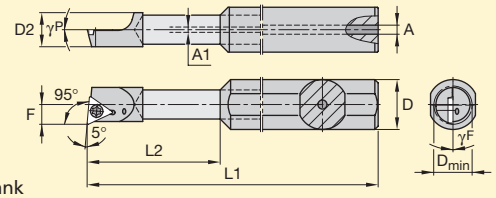




Necked steel shank
with through coolant

E-STLD -5°





Necked carbide shank
with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A3208FSTLD R/L 12805	.500	.275	.203	.126	3.000	-	.500	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A3208FSTLD R/L 1281	.500	.275	.203	.126	3.000	-	1.000	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A0408FSTLD R/L 128075	.500	.296	.259	.156	3.000	-	.750	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0408FSTLD R/L 128125	.500	.296	.259	.156	3.000	-	1.250	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0508FSTLD R/L 1281	.500	.358	.321	.187	3.000	-	1.000	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0508FSTLD R/L 12815	.500	.358	.321	.187	3.000	-	1.500	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A3210HSTLD R/L 12805	.625	.275	.203	.126	4.000	-	.500	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A3210HSTLD R/L 1281	.625	.275	.203	.126	4.000	-	1.000	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC11**	T7
A0410HSTLD R/L 128075	.625	.296	.259	.156	4.000	-	.750	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0410HSTLD R/L 128125	.625	.296	.259	.156	4.000	-	1.250	-	-	.040	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0510HSTLD R/L 1281	.625	.358	.321	.187	4.000	-	1.000	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
A0510HSTLD R/L 12815	.625	.358	.321	.187	4.000	-	1.500	-	-	.060	-	-	0.0	5.0	**TD..12807505**	**FC14**	T7
													γF°	γP°			
E3208XSTLD R/L 1281	.500	.275	.197	.126	2.500	-	1.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E3208GSTLDR1282	.500	.275	.197	.126	3.500	-	2.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0408XSTLD R/L 128125	.500	.296	.250	.156	2.750	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0408HSTLDR12825	.500	.296	.250	.156	4.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0508FSTLD R/L 12815	.500	.358	.312	.187	3.000	-	1.500	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0508XSTLDR128312	.500	.358	.312	.187	4.625	-	3.125	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0310HSTLD R/L 1281	.625	.275	.197	.126	4.000	-	1.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0310KSTLDR1282	.625	.275	.197	.126	5.000	-	2.000	-	-	.125	.040	-	0.0	5.0	**TD..12807505**	**FC11**	T7
E0410HSTLD R/L 128125	.625	.296	.250	.156	4.000	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0410XSTLDR12825	.625	.296	.250	.156	5.250	-	2.500	-	-	.125	.047	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0510HSTLD R/L 12815	.625	.358	.312	.187	4.000	-	1.500	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7
E0510XSTLDR128312	.625	.358	.312	.187	5.625	-	3.125	-	-	.125	.093	-	0.0	5.0	**TD..12807505**	**FC14**	T7

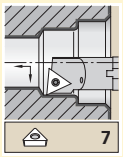
Order example:
Right hand: **A3208FSTLDR12805**

Left hand: **A3208FSTLDL12805**

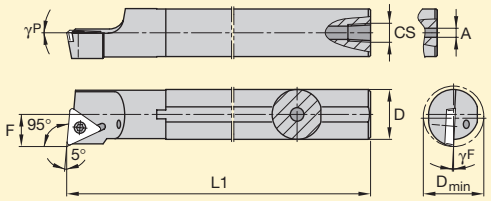
SCREW-ON Boring Bars

SCREW-ON Inserts

A-STLP -5°



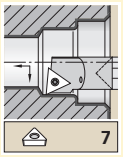
Steel shank with
through coolant



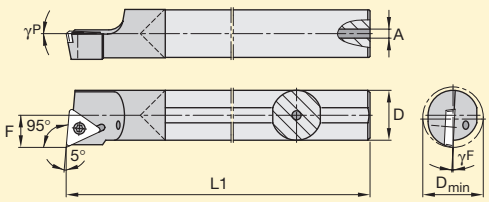
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06STLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-4.0	0.0	**TP..2151***	**MS1153**	T7
A08STLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-2.0	0.0	**TP..2151***	**MS1153**	T7
A10STLP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	0.0	0.0	**TP..2151***	**MS1153**	T7
A12STLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**TP..3252****	**MS1155**	T15
A16STLP R/L 3	1.000	1.220	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**TP..3252****	**MS1155**	T15

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. TPMT/TPGT/TPGW-32.5_).
90° countersunk hole inserts (i.e. TPGM/TPGB-32.5_) do not fit this tool.

E-STLP -5°



Carbide shank with
through coolant

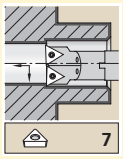


Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
E06STLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-4.0	0.0	**TP..2151***	**MS1153**	T7
E08STLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.19	-	-	-2.0	0.0	**TP..2151***	**MS1153**	T7
E10STLP R/L 2	.625	.770	-	.406	10.00	-	-	-	-	.22	-	-	0.0	0.0	**TP..2151***	**MS1153**	T7
E12STLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-2.0	0.0	**TP..3252****	**MS1155**	T15
E16STLP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	.31	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15

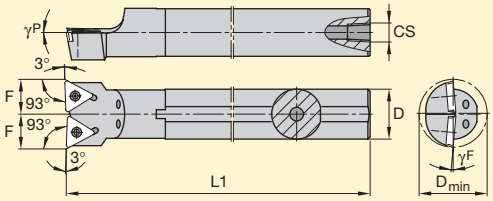
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. TPMT/TPGT/TPGW-32.5_).
90° countersunk hole inserts (i.e. TPGM/TPGB-32.5_) do not fit this tool.

Order example:
Right hand: **A06STLPR2**
Left hand: **A06STLPL2**

A-STUP-D -3°



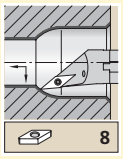
Steel shank with through coolant



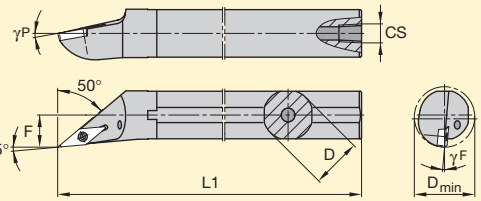
Catalog number	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
Right hand																	
A08STUPR2D	.500	.875	-	.421	8.00	-	-	-	-	-	-	1/16-27 NPT	-5.0	0.0	**TP..2151***	**MS1153**	T7
A10STUPR2D	.625	.905	-	.437	10.00	-	-	-	-	-	-	1/8-27 NPT	-4.0	0.0	**TP..2151***	**MS1153**	T7
A12STUPR2D	.750	1.031	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**TP..2151***	**MS1153**	T7

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.

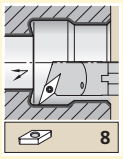
A-SVMB -5°



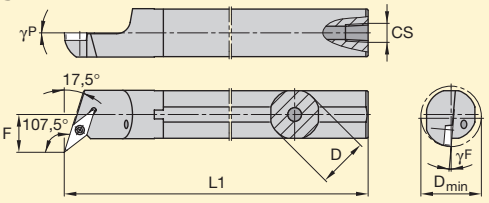
Steel shank with through coolant



A-SVQB -17.5°



Steel shank with through coolant



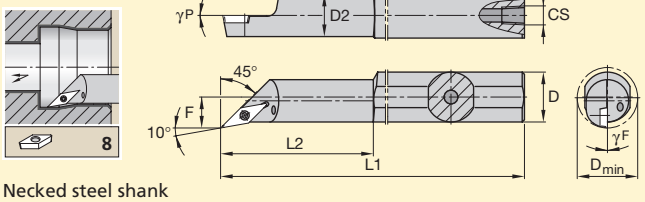
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A08SVMBR2E	.500	.980	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-5.0	-10.0	**VB..221**	**MS1153**	T7
A10SVMBR2E	.625	.980	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	-10.0	**VB..221**	**MS1153**	T7
A12SVMBR3E	.750	1.286	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	-10.0	**VB..332**	**MS1155**	T15
A16SVMBR3E	1.000	1.286	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-5.0	-10.0	**VB..332**	**MS1155**	T15
													γF°	γP°			
A10SVQB R/L 2	.625	.850	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-6.0	0.0	**VB..221**	**MS1153**	T7
A12SVQB R/L 2	.750	.980	-	.562	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**VB..221**	**MS1153**	T7
A16SVQB R/L 3	1.000	1.300	-	.750	12.00	-	-	-	-	-	-	1/4-18 NPT	-5.0	0.0	**VB..332**	**MS1155**	T15

Order example:
Right hand: **A08STUPR2D**

SCREW-ON Boring Bars

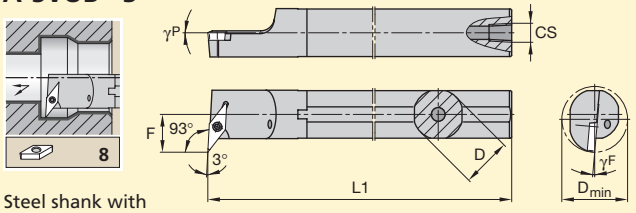
SCREW-ON Inserts

A-SVSP -10°



Necked steel shank with through coolant

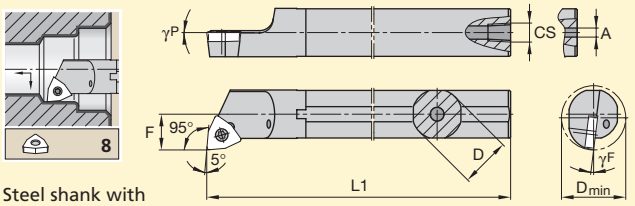
A-SVUB -3°



Steel shank with through coolant

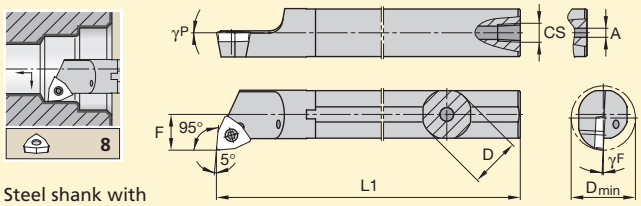
Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx or Hex (inch)
A2732SVSPRW4	2.000	2.200	1.688	1.080	14.00	-	5.310	-	-	-	-	1/4-18 NPT	0.0	0.0	**VP..443K**	**S411**	5/32
													γF°	γP°			
A12SVUB R/L 2	.750	.980	-	.562	10.00	-	-	-	-	-	-	1/8-27 NPT	-6.0	0.0	**VB..221**	**MS1153**	T7
A16SVUB R/L 3	1.000	1.300	-	.750	12.00	-	-	-	-	-	-	1/4-18 NPT	-6.0	0.0	**VB..332**	**MS1155**	T15

A-SWLC -5°



Steel shank with through coolant

A-SWLP -5°

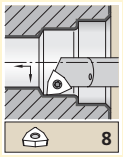


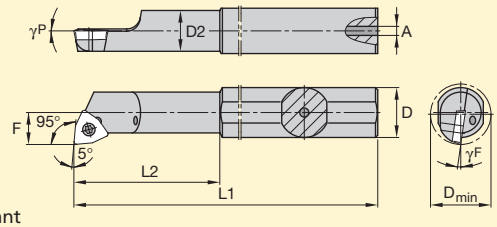
Steel shank with through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A06SWLC R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.130	-	-	-8.0	0.0	**WC..2151**	**MS1939**	T7
A08SWLC R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-6.0	0.0	**WC..2151**	**MS1153**	T7
A10SWLC R/L 3	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-7.0	0.0	**WC..3252**	**MS1155**	T15
A12SWLC R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-5.0	0.0	**WC..3252**	**MS1155**	T15
A16SWLC R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	-4.0	0.0	**WC..3252**	**MS1155**	T15
													γF°	γP°			
A06SWLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.125	-	-	-7.0	0.0	**WP..2151**	**MS1939**	T7
A08SWLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	-	-	1/16-27 NPT	-2.0	0.0	**WP..2151**	**MS1153**	T7
A10SWLP R/L 3	.625	.770	-	.406	10.00	-	-	-	-	-	-	1/8-27 NPT	-3.0	0.0	**WP..3252**	**MS1155**	T15
A12SWLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	-	-	1/8-27 NPT	-2.0	0.0	**WP..3252**	**MS1155**	T15
A16SWLP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	-	-	1/4-18 NPT	0.0	0.0	**WP..3252**	**MS1155**	T15

Order example:
Right hand: **A2732SVSPRW4**

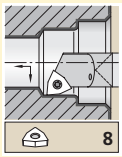
A-SWLP -5°

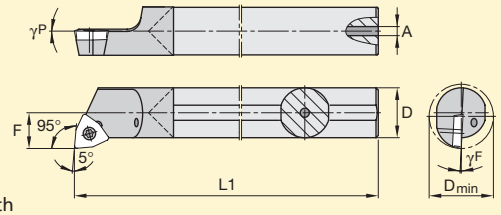




Necked steel shank
with through coolant

E-SWLP -5°

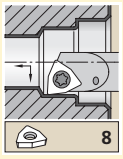


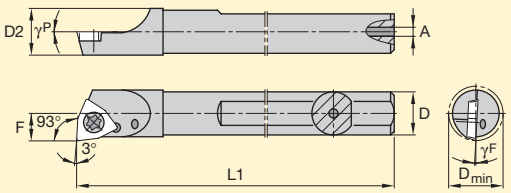


Carbide shank with
through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A0306SWLP R/L 15	.375	.260	.193	.126	3.50	-	1.000	-	-	.078	-	-	-10.0	0.0	**WP..15121**	**MS1438**	T5
A0406SWLP R/L 15	.375	.321	.234	.156	4.00	-	1.250	-	-	.078	-	-	-8.0	0.0	**WP..15121**	**MS1438**	T5
A0506SWLP R/L 15	.375	.415	.299	.219	5.00	-	1.625	-	-	.094	-	-	-4.0	0.0	**WP..15121**	**MS1438**	T5
													γF°	γP°			
E03SWLP R/L 15	.188	.260	-	.126	4.00	-	-	-	-	.04	-	-	-10.0	0.0	**WP..15121**	**MS1438**	T5
E04SWLP R/L 15	.250	.321	-	.156	4.00	-	-	-	-	.05	-	-	-8.0	0.0	**WP..15121**	**MS1438**	T5
E05SWLP R/L 15	.313	.415	-	.219	5.00	-	-	-	-	.09	-	-	-4.0	0.0	**WP..15121**	**MS1438**	T5
E06SWLP R/L 2	.375	.480	-	.250	6.00	-	-	-	-	.13	-	-	-5.0	0.0	**WP..2151**	**MS1153**	T7
E08SWLP R/L 2	.500	.600	-	.312	8.00	-	-	-	-	.19	-	-	-2.0	0.0	**WP..2151**	**MS1153**	T7
E10SWLP R/L 3	.625	.770	-	.406	10.00	-	-	-	-	.22	-	-	-3.0	0.0	**WP..3252**	**MS1155**	T15
E12SWLP R/L 3	.750	.930	-	.500	10.00	-	-	-	-	.28	-	-	-2.0	0.0	**WP..3252**	**MS1155**	T15
E16SWLP R/L 3	1.000	1.200	-	.640	12.00	-	-	-	-	.31	-	-	0.0	0.0	**WP..3252**	**MS1155**	T15

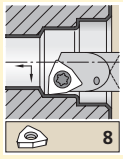
A-SWUD -3°

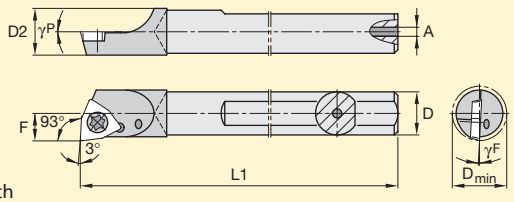




Steel shank with
through coolant

E-SWUD -3°





Carbide shank with
through coolant

Catalog number Right hand/Left hand	D	Dmin	D2	F	L1	L	L2	CD	L1A	A	A1	CS	γF°	γP°	Gage Insert	Insert Screw	Torx
A03HSWUD R/L 15	.187	.260	.225	.126	4.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
A04HSWUD R/L 15	.250	.285	.260	.143	4.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
A05HSWUD R/L 15	.312	.347	.322	.174	4.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
A06KSWUD R/L 2	.187	.415	.385	.211	5.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..21505**	**MS1153**	T7
A08MSWUD R/L 2	.250	.540	.510	.273	6.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..21505**	**MS1153**	T7
													γF°	γP°			
E03MSWUD R/L 15	.187	.260	.225	.126	6.00	-	-	-	-	.040	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
E04MSWUD R/L 15	.250	.285	.260	.143	6.00	-	-	-	-	.047	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
E05MSWUD R/L 15	.312	.347	.322	.174	6.00	-	-	-	-	.093	-	-	-3.0	0.0	**WP..15105**	**MS1438**	T5
E06MSWUD R/L 2	.375	.415	.385	.211	6.00	-	-	-	-	.125	-	-	-3.0	0.0	**WP..21505**	**MS1153**	T7
E08RSWUD R/L 2	.500	.540	.510	.273	8.00	-	-	-	-	.500	-	-	-3.0	0.0	**WP..21505**	**MS1153**	T7

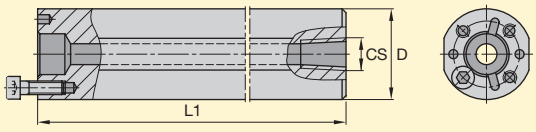
Order example:
Right hand: **A0306SWLPR15**

Left hand: **A0306SWLPL15**

INTERCHANGEABLE HEADS

Boring Adapters

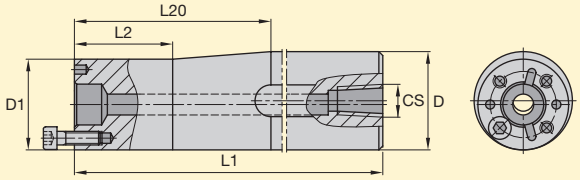
S-4400W



Steel shank with through coolant

max. 4:1 overhang ratio

S-4400W48

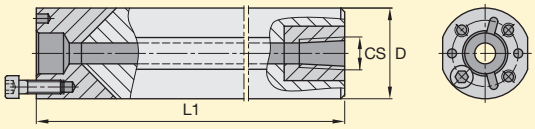


Steel shank with through coolant

max. 4:1 overhang ratio

Catalog number	D	L1	CS	L2	L20	D1	L12	L1min (min. for shortening)	Screw 3 req'd	Screw	Hex (inch)
S4416W	1.000	9.00	1/4-18NPT	-	-	-	-	-	**S319**	**S322**	9/64
S4420W	1.250	9.00	1/4-18NPT	-	-	-	-	-	**S327**	**S330**	5/32
S4424W	1.500	10.00	1/4-18NPT	-	-	-	-	-	**S327**	**S330**	5/32
S4428W	1.750	12.00	1/4-18NPT	-	-	-	-	-	**S337**	**S340**	3/16
S4432W	2.000	13.00	1/4-18NPT	-	-	-	-	-	**S337**	**S340**	3/16
S4436W	2.250	15.00	1/4-18NPT	-	-	-	-	-	**S337**	**S340**	3/16
S4440W	2.500	17.00	1/4-18NPT	-	-	-	-	-	**S350**	**S353**	1/4
S4440W48	3.00	18.00	3/8-18NPT	3.00	6.00	2.5	-	-	**S350**	**S353**	1/4

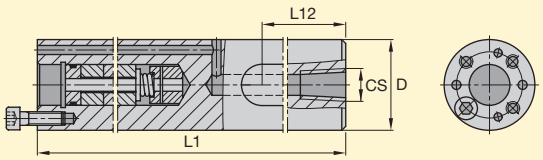
C-11800W



Carbide shank with through coolant

max. 6:1 overhang ratio

D-5400W



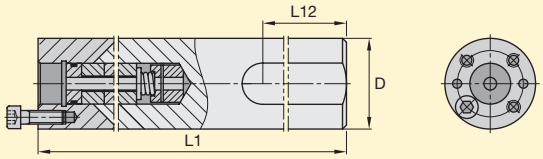
Steel shank DeVibrator with through coolant

max. 6:1 overhang ratio

Catalog number	D	L1	CS	L2	L20	D1	L12	L1min (min. for shortening)	Screw 3 req'd	Screw	Hex (inch)
C11816W	1.000	11.00	1/4-18NPT	-	-	-	-	-	**S319**	**S322**	9/64
C11820W	1.250	11.00	1/4-18NPT	-	-	-	-	-	**S412**	**S415**	5/32
D5420W	1.250	10.00	3/8-18NPT	-	-	-	7.75	7.00	**S327**	**S330**	5/32
D5424W	1.500	12.00	3/8-18NPT	-	-	-	9.25	8.00	**S327**	**S330**	5/32
D5428W	1.750	14.00	3/8-18NPT	-	-	-	10.12	9.00	**S337**	**S340**	3/16
D5432W	2.000	16.00	3/8-18NPT	-	-	-	12.75	10.00	**S337**	**S340**	3/16
D5436W	2.250	18.00	3/8-18NPT	-	-	-	14.38	11.00	**S337**	**S340**	3/16
D5440W	2.500	20.00	3/8-18NPT	-	-	-	14.87	12.00	**S350**	**S353**	1/4

Order example:
S4416W

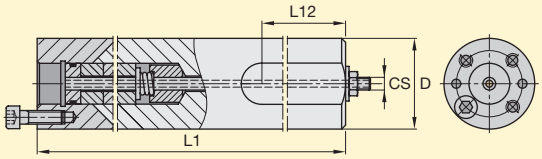
C-6400



Carbide shank DeVibrator with through coolant

max. 8:1 overhang ratio

C-6400W

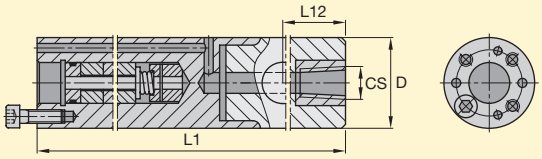


Carbide shank DeVibrator with through coolant

max. 8:1 overhang ratio

Catalog number	D	L1	CS	L2	L20	D1	L12	L1min (min. for shortening)	Screw 3 req'd	Screw	Hex (inch)
C6420	1.25	11.00	-	-	-	-	8.75	7.00	**S412**	**S415**	5/32
C6420W	1.250	11.00	1/4-28UNF	-	-	-	8.75	7.00	**S412**	**S415**	5/32
C6424W	1.500	14.00	1/4-28UNF	-	-	-	11.25	8.00	**S412**	**S415**	5/32
C6428W	1.750	16.00	3/8-24UNF	-	-	-	11.38	9.00	**S422**	**S425**	3/16
C6432W	2.000	19.00	3/8-24UNF	-	-	-	15.75	10.00	**S422**	**S425**	3/16
C6436W	2.250	21.00	3/8-24UNF	-	-	-	17.38	11.00	**S422**	**S425**	3/16
C6440W	2.500	24.00	3/8-24UNF	-	-	-	18.00	12.00	**S432**	**S435**	1/4

C-11900W



Composite shank DeVibrator with through coolant

max. 10:1 overhang ratio

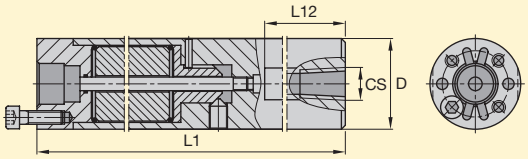
Catalog number	D	L1	CS	L2	L20	D1	L12	L1min (min. for shortening)	Screw 3 req'd	Screw	Hex (inch)
C11924W	1.500	15.00	3/8-18NPT	-	-	-	7.75	-	**S327**	**S330**	5/32
C11928W	1.750	17.00	3/8-18NPT	-	-	-	8.25	-	**S337**	**S340**	3/16
C11932W	2.000	20.00	3/8-18NPT	-	-	-	9.75	-	**S337**	**S340**	3/16
C11936W	2.250	22.00	3/8-18NPT	-	-	-	10.25	-	**S337**	**S340**	3/16
C11940W	2.500	25.00	3/8-18NPT	-	-	-	11.75	-	**S350**	**S353**	1/4

Order example:
C6420

INTERCHANGEABLE HEADS

Boring Adapters

DTT-B



Tuneable steel shank
with through coolant

Catalog number	D	L1	CS	L2	L20	D1	L12	L1min (min. for shortening)	Screw 3 req'd	Screw	Hex (inch)
D16TTB16	1.000	15.00	1/4-18NPT	-	-	-	8.00	9.09	**S316**	**S318/S321**	9/64
D20TTB18	1.250	16.13	1/4-18NPT	-	-	-	10.00	9.59	**S325**	**S329**	5/32
D24TTB21	1.500	19.38	1/4-18NPT	-	-	-	12.00	11.04	**S327**	**S330**	5/32
D28TTB25	1.750	23.38	1/4-18NPT	-	-	-	15.75	12.35	**S337**	**S340**	3/16
D32TTB28	2.000	26.38	1/4-18NPT	-	-	-	18.50	12.27	**S337**	**S340**	3/16
D40TTB35	2.500	33.38	1/4-18NPT	-	-	-	24.75	14.88	**S350**	**S353**	1/4
D48TTB42*	3.000	40.38	1/4-18NPT	-	-	-	24.00	19.09	**S350**	**S353**	1/4
D64TTB56*	4.000	54.38	3/8-18NPT	-	-	-	20.00	25.76	**S350**	**S353**	1/4

*Uses 2.5" diameter heads.

NOTE: For 5/8" diameter turned boring bar system, use D10SCLPR2TTB9.
For 3/4" diameter turned boring bar system, use D12SCLPR2TTB10

Tuneable Steel Shank with Through Coolant

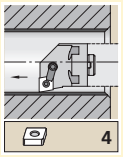
Kennametal tuneable boring bars are manufactured with an internal dampening package designed to eliminate chatter in deep-hole boring applications. We not only manufacture standard tuneable boring bars as listed, but Kennametal has the capability to design and manufacture just about any style or size of tuneable products. Boring bars, extensions, holders, rotating adapters, and modular sections are a few examples of products manufactured with tuning packages. The features and benefits of the patented tuneable bar system provide significant improvements in metalcutting productivity.

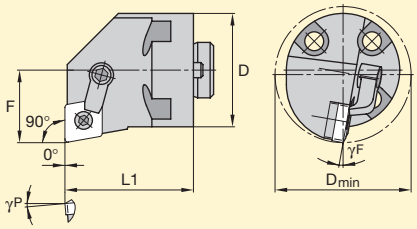
Features and Benefits

- Machine at extended lengths without chatter or vibration.
- Increase depth of cut and material removal rates at extended overhangs.
- Hold tighter tolerances and reduce scrap rates.
- Provides tool application range from 6:1 to 10:1 length-to-diameter ratios.
- Delivers improved tool life.
- Boring bars are shipped pre-tuned from the factory for a 10:1 application range.
- At the machine, boring bars may be fine adjusted, by hand tuning, to achieve optimum cutting conditions.

Order example:
D16TTB16

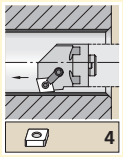
H-MCFN 0°

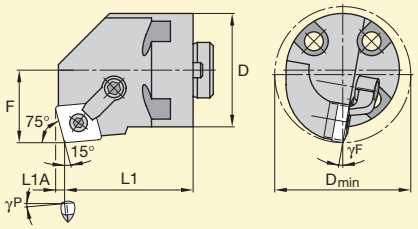




With through coolant

H-MCKN 15°

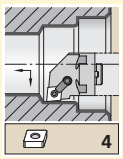


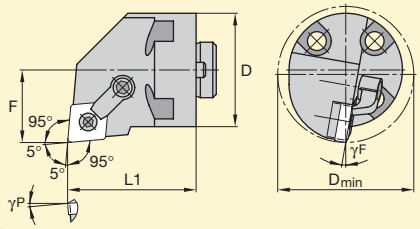


With through coolant

Catalog number Right hand/Left hand	D	F	L1	L1A	L1S	Dmin	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H20MCFN R/L 4	1.250	.765	1.625	-	-	1.470	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCFN R/L 4	1.500	.890	1.625	-	-	1.760	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCFN R/L 5	2.000	1.281	1.625	-	-	2.400	-10.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCFN R/L 6	2.000	1.281	1.625	-	-	2.400	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MCFN R/L 6	2.500	1.531	1.625	-	-	3.030	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
							γF°	γP°							
H20MCKN R/L 4	1.250	.765	1.625	.120	-	1.470	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCKN R/L 4	1.500	.890	1.625	.120	-	1.760	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKN R/L 4	2.000	1.281	1.625	.120	-	2.400	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKN R/L 5	2.000	1.281	1.625	.149	-	2.400	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
H40MCKN R/L 5	2.500	1.531	1.625	.149	-	3.030	-10.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCKN R/L 6	2.500	1.531	1.625	.182	-	3.030	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

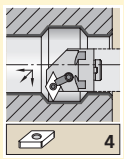
H-MCLN -5°

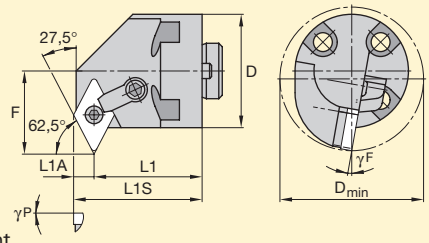




With through coolant

H-MDPN 27.5°





With through coolant

Catalog number Right hand/Left hand	D	F	L1	L1A	L1S	Dmin	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H16MCLN R/L 3	1.000	.640	1.625	-	-	1.200	-10.0	-5.0	**CN..322**	-	**KL33**	5/64	**CK6**	**STC5**	3/32
H32MCLN R/L 3	2.000	1.281	1.625	-	-	2.400	-8.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
H40MCLN R/L 3	2.500	1.531	1.625	-	-	3.030	-8.0	-5.0	**CN..322**	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
H16MCLN R/L 4	1.000	.640	1.625	-	-	1.200	-14.0	-5.0	**CN..432**	-	**KL44**	3/32	**CK7**	**STC9**	3/32
H20MCLN R/L 4	1.250	.765	1.625	-	-	1.470	-14.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLN R/L 4	1.500	.890	1.625	-	-	1.760	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MCLN R/L 4	1.750	1.015	1.625	-	-	2.010	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCLN R/L 4	2.000	1.281	1.625	-	-	2.400	-12.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H40MCLN R/L 4	2.500	1.531	1.625	-	-	3.030	-8.0	-5.0	**CN..432**	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLN R/L 5	1.500	.890	1.625	-	-	1.760	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLN R/L 5	2.000	1.281	1.625	-	-	2.400	-12.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCLN R/L 5	2.500	1.531	1.625	-	-	3.030	-8.0	-5.0	**CN..543**	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLN R/L 6	2.000	1.281	1.625	-	-	2.400	-12.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H36MCLN R/L 6	2.250	1.406	1.625	-	-	2.650	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MCLN R/L 6	2.500	1.531	1.625	-	-	3.030	-10.0	-5.0	**CN..643**	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
							γF°	γP°							
H20MDPNR4	1.250	1.000	1.367	.258	1.625	1.705	-13.0	0.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDPNR4	1.500	1.125	1.365	.260	1.625	2.000	-10.0	0.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8

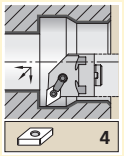
Order example:
Right hand: **H20MCFNR4**

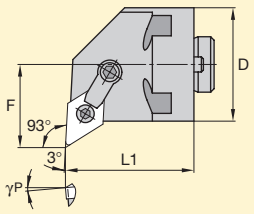
Left hand: **H20MCFNL4**

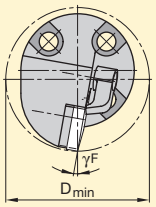
KENLOC Boring Heads

KENLOC Inserts

H-MDUN -3°

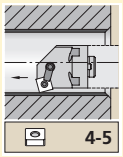


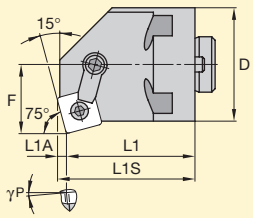


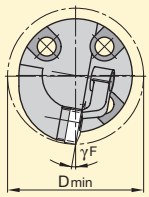


With through coolant

H-MSKN 15°



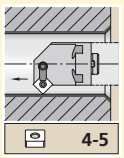


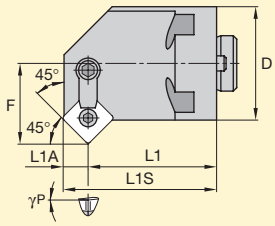


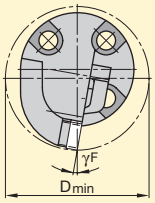
With through coolant

Catalog number Right hand/Left hand	D	F	L1	L1A	L1S	Dmin	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H16MDUN R/L 3	1.000	.750	1.625	-	-	1.300	-11.0	-5.0	**DN..332**	**-**	**KL33L**	5/64	**CK7**	**STC5**	3/32
H24MDUN R/L 3	1.500	1.125	1.625	-	-	2.000	-10.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H32MDUN R/L 3	2.000	1.320	1.625	-	-	2.500	-8.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H40MDUN R/L 3	2.500	1.750	1.625	-	-	3.250	-8.0	-5.0	**DN..332**	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H20MDUN R/L 4	1.250	1.000	1.625	-	-	1.705	-12.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDUN R/L 4	1.500	1.125	1.625	-	-	2.000	-10.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H28MDUN R/L 4	1.750	1.250	1.625	-	-	2.250	-10.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H32MDUN R/L 4	2.000	1.370	1.625	-	-	2.500	-8.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H36MDUN R/L 4	2.250	1.495	1.625	-	-	2.870	-8.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H40MDUN R/L 4	2.500	1.750	1.625	-	-	3.250	-8.0	-5.0	**DN..432**	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
							γF°	γP°							
H20MSKN R/L 4	1.250	.765	1.625	.118	1.743	1.470	-14.0	-5.0	**SN..432**	**-**	**KL44**	3/32	**CK21**	**STC20**	1/8
H24MSKN R/L 4	1.500	.890	1.625	.119	1.744	1.760	-10.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H28MSKN R/L 4	1.750	1.015	1.625	.119	1.744	2.010	-10.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H32MSKN R/L 4	2.000	1.281	1.625	.119	1.744	2.400	-12.0	-5.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H40MSKN R/L 6	2.500	1.531	1.625	.179	1.804	3.030	-10.0	-5.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

H-MSSN 45°

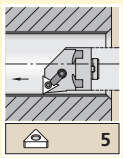


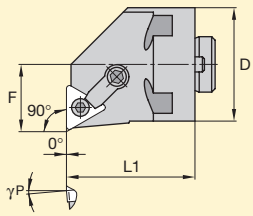


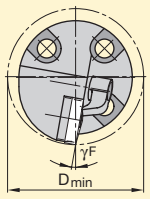


With through coolant

H-MTFN 0°







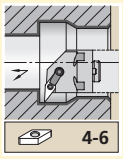
With through coolant

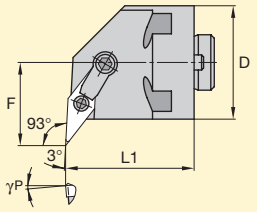
Catalog number Right hand/Left hand	D	F	L1	L1A	L1S	Dmin	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H24MSSNR4	1.500	1.125	1.625	.338	1.287	2.000	-10.0	0.0	**SN..432**	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H32MSSNR6	2.000	1.375	1.625	.507	1.118	2.500	-10.0	0.0	**SN..633**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MSSN R/L 6	2.500	1.750	1.625	.507	1.118	3.250	-10.0	0.0	**SN..643**	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
							γF°	γP°							
H16MTFN R/L 3	1.000	.640	1.625	-	-	1.220	-12.0	-5.0	**TN..332**	**-**	**KL33L**	5/64	**CK7**	**STC9**	3/32
H24MTFN R/L 3	1.500	.890	1.625	-	-	1.760	-10.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
H28MTFN R/L 3	1.750	1.015	1.625	-	-	2.010	-10.0	-5.0	**TN..332**	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
H32MTFN R/L 4	2.000	1.281	1.625	-	-	2.400	-8.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
H40MTFN R/L 4	2.500	1.531	1.625	-	-	3.030	-6.0	-5.0	**TN..432**	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32

Order example:
Right hand: **H16MDUNR3**

Left hand: **H16MDUNL3**

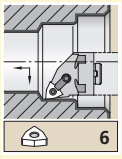
H-MVUN -3°

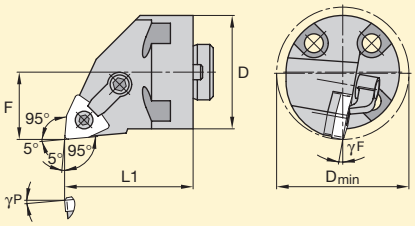




With through coolant

H-MWLN -5°





With through coolant

Catalog number Right hand/Left hand	D	F	L1	L1A	L1S	Dmin	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H20MVUN R/L 3	1.250	1.000	1.625	-	-	1.705	-12.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK22**	**STC20**	1/8
H24MVUN R/L 3	1.500	1.125	1.625	-	-	2.000	-12.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK22**	**STC20**	1/8
H32MVUN R/L 3	2.000	1.325	1.625	-	-	2.500	-10.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK22**	**STC20**	1/8
H40MVUN R/L 3	2.500	1.750	1.625	-	-	3.250	-10.0	-5.0	**VN..332**	**IVSN322**	**KL34L**	5/64	**CK22**	**STC20**	1/8
H32MVUN R/L 4	2.000	1.375	1.625	-	-	2.500	-10.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
H40MVUN R/L 4	2.500	1.750	1.625	-	-	3.250	-10.0	-5.0	**VN..432**	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
							γF°	γP°							
H16MWLN R/L 3	1.000	.640	1.625	-	-	1.200	-12.0	-5.0	**WN..332**	**-**	**KL33L**	5/64	**CK6**	**STC5**	3/32
H20MWLNR3	1.250	.765	1.625	-	-	1.470	-14.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
H24MWLN R/L 3	1.500	.890	1.625	-	-	1.760	-12.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
H32MWLN R/L 3	2.000	1.281	1.625	-	-	2.400	-10.0	-5.0	**WN..332**	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
H20MWLN R/L 4	1.250	.765	1.625	-	-	1.470	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MWLN R/L 4	1.500	.890	1.625	-	-	1.760	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MWLN R/L 4	1.750	1.015	1.625	-	-	2.010	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MWLN R/L 4	2.000	1.281	1.625	-	-	2.400	-14.0	-5.0	**WN..432**	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8

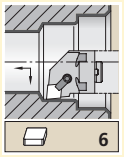
Order example:
Right hand: **H20MVUNR3**

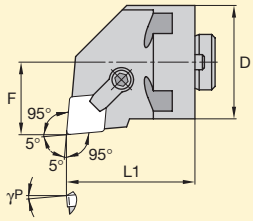
Left hand: **H20MVUNL3**

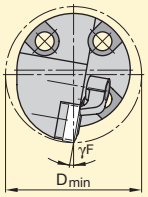
KENDEX Boring Heads

KENDEX negative polycrystalline Inserts

H-CCLN -5°

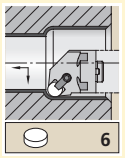


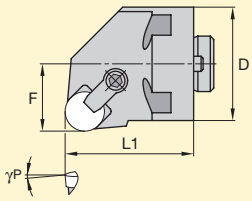


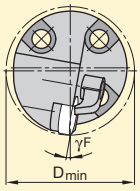


With through coolant

H-CRGN



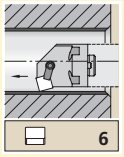


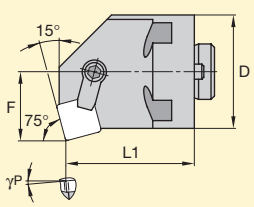


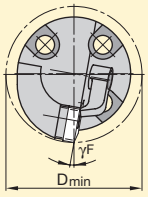
With through coolant

Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H16CCLNR3	1.000	.640	1.625	1.220	-10.0	-5.0	**CN.322**	**-**	**-**	-	**CK7LP**	**STC9**	3/32
H20CCLNR3	1.250	.765	1.625	1.470	-12.0	-5.0	**CN.322**	**SM432**	**SL344**	-	**CK7LP**	**STC9**	3/32
					γF°	γP°							
H16CRGN R/L 4	1.000	.640	1.625	1.200	-10.0	-5.0	**RN.42**	**-**	**-**	-	**CK7LP**	**STC9**	3/32
H24CRGN R/L 4	1.500	.890	1.625	1.760	-12.0	-5.0	**RN.42**	**SM437**	**SL344**	-	**CK7LP**	**STC9**	3/32
H32CRGN R/L 4	2.000	1.281	1.625	2.400	-12.0	-5.0	**RN.42**	**SM437**	**SL344**	-	**CK7LP**	**STC9**	3/32

H-CSKN 15°





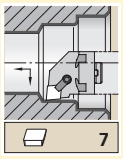


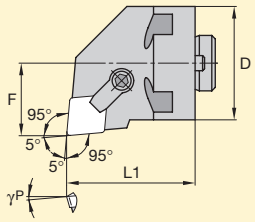
With through coolant

Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H16CSKN R/L 3	1.000	.640	1.625	1.220	-14.0	-5.0	**SN.322**	**-**	**-**	-	**CK7LP**	**STC9**	3/32
H20CSKNR3	1.250	.765	1.625	1.470	-14.0	-5.0	**SN.322**	**SM87**	**SL344**	-	**CK7LP**	**STC9**	3/32
H24CSKNR3	1.500	.890	1.625	1.760	-12.0	-5.0	**SN.322**	**SM87**	**SL344**	-	**CK7LP**	**STC9**	3/32
H32CSKNR3	2.000	1.281	1.625	2.400	-12.0	-5.0	**SN.322**	**SM87**	**SL344**	-	**CK7LP**	**STC9**	3/32

Order example:
Right hand: **H16CCLNR3**

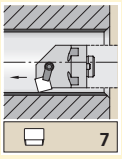
H-CCLP -5°

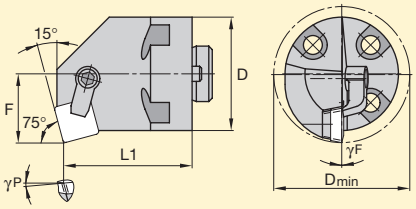




With through coolant

H-CSKP 15°

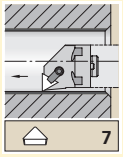


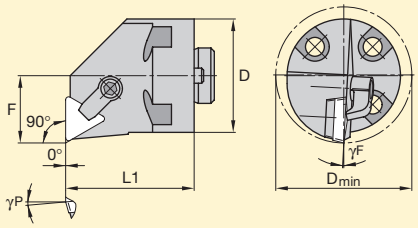


With through coolant

Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand													
H20CCLPR4W	1.250	.765	1.625	1.470	0.0	5.0	**CP.422**	**SM369**	**S111**	1/16	**CK20**	**STC11**	1/8
H24CCLPR4W	1.500	.890	1.625	1.760	0.0	5.0	**CP.422**	**SM369**	**S111**	1/16	**CK20**	**STC20**	1/8
					γF°	γP°							
H20CSKP R/L 4W	1.250	.765	1.625	1.470	0.0	5.0	**SP.422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
H24CSKP R/L 4W	1.500	.890	1.625	1.760	0.0	5.0	**SP.422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
H28CSKP R/L 4W	1.750	1.015	1.625	2.010	0.0	5.0	**SP.422**	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32

H-CTFP 0°





With through coolant

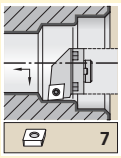
Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
H20CTFP R/L 3W	1.250	.765	1.625	1.470	-3.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H24CTFP R/L 3W	1.500	.890	1.625	1.760	-3.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H28CTFP R/L 3W	1.750	1.015	1.625	2.010	-3.0	5.0	**TP.322**	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H24CTFP R/L 4W	1.500	.890	1.625	1.760	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
H28CTFP R/L 4W	1.750	1.015	1.625	2.010	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
H32CTFP R/L 4W	2.000	1.281	1.625	2.400	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32
H40CTFP R/L 4W	2.500	1.531	1.625	3.030	-3.0	5.0	**TP.432**	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32

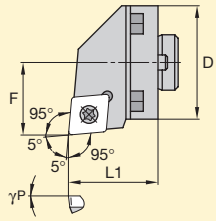
Order example:
Right hand: **H20CCLPR4W**

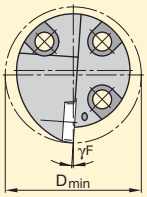
SCREW-ON Boring Heads

SCREW-ON Inserts

H-SCLC -5°

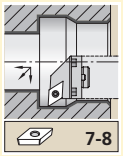


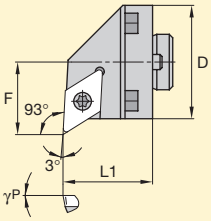


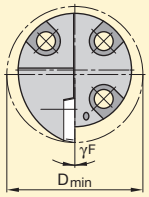


With through coolant

H-SDUP -3°



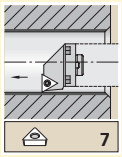


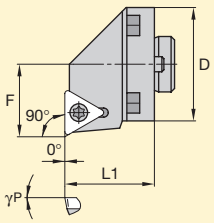


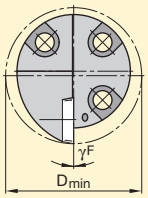
With through coolant

Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Insert Screw	Torx
H16SCLC R/L 3	1.000	.640	.790	1.200	-4.0	0.0	**CC..3252**	**MS1155**	T15
					γF	γP			
H16SDUP R/L 3	1.000	.640	.790	1.200	0.0	0.0	**DP..3252**	**MS1155**	T15

H-STFP 0°







With through coolant

Catalog number Right hand/Left hand	D	F	L1	Dmin	γF°	γP°	Gage Insert	Insert Screw	Torx
H16STFP R/L 2	1.000	.640	.790	1.200	0.0	0.0	**TP..2151**	**MS1153**	T7

Order example:
Right hand: **H16SCLCR3**
Left hand: **H16SCLCL3**

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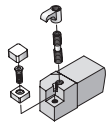
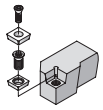
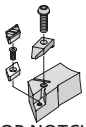
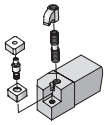
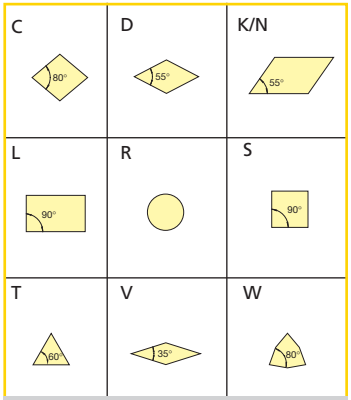
Cartridge Identification System

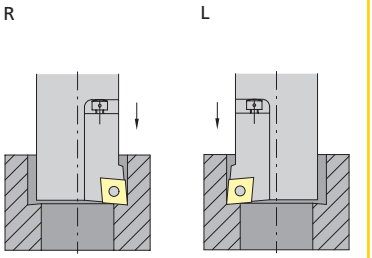
1. Insert Holding Method

C  KENDEX	S  SCREW-ON
N*  TOP NOTCH Profiling	M  KENLOC

2. Insert Shape



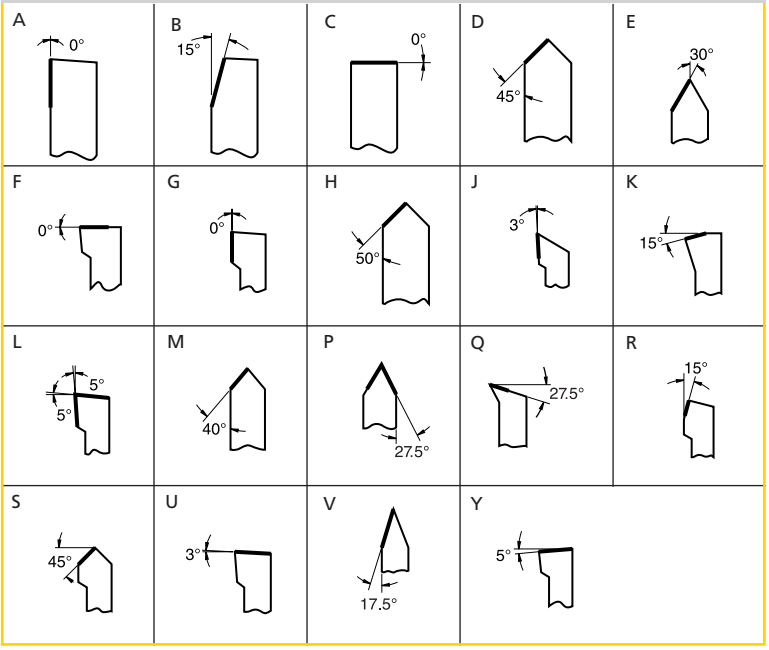
5. Hand of Tool



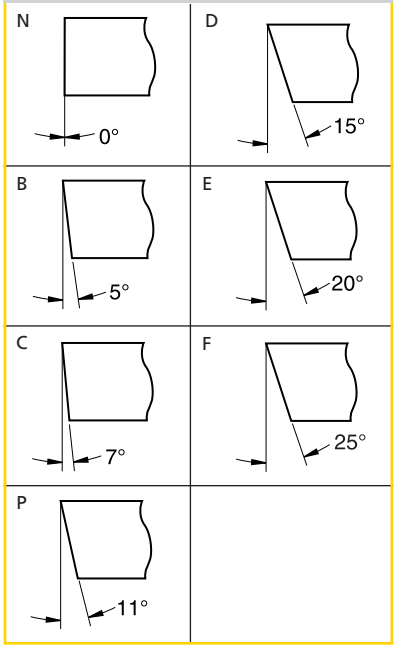
Example:

M	C	L	N	R

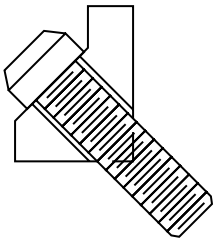
3. Tool Style or Lead Angle



4. Insert Clearance Angle

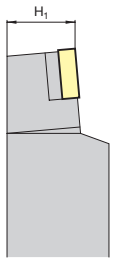


*Kennametal standard only



7. Cartridge Identification	8. Cartridge Mounting		9. Insert Size	
C – Cartridge	A – angular acc. ISO 5611		**Insert IC** Number of 1/8ths of "D"	
20	**C**	**A**	**-**	**4**

6. Cartridge Size

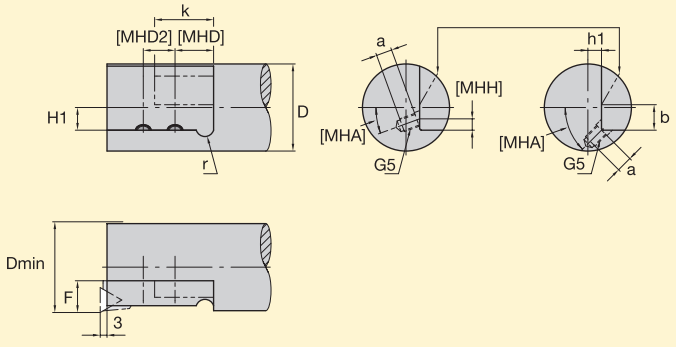


H = cutting edge height of cartridge, in millimeters.

10. Hardware

C – metric threads, inch hex drive
A – metric threads, metric hex drive
T – metric threads, Torx drive

Cartridge Mounting Dimensions



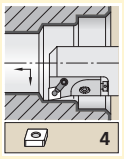
NOTE: All dimensions below in mm

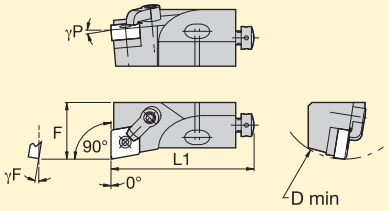
Size of cartridge	H1	h1	Dmin	D	a	b	[MHD]	F	k	r	[MHH]	[MHD2]	[MHA]	[G5]
06	6	2,0	20	17	10	11	12	8	12,0	4,0	3,5	-	20	M 3,5 x 0,60
08	8	2,5	25	22	10	14	17	10	18,5	5,0	4,5	-	20	M 4,0 x 0,70
10	10	6,0	40	37	14	16	20	14	26,0	8,0	5,0	-	20	M 6,0 x 1,00
12	12	5,0	50	47	14	21	20	20	28,0	9,5	6,0	-	20	M 6,0 x 1,00
16	16	5,0	60	57	15	24	25	25	34,0	9,5	-	-	45	M 8,0 x 1,25
20	20	10,0	70	67	15	31	30	25	36,0	9,5	-	-	45	M 8,0 x 1,25
25	25	18,0	100	97	19	36	30	32	60,0	12,5	-	20	45	M10,0 x 1,50

KENLOC Cartridges

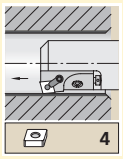
KENLOC Inserts

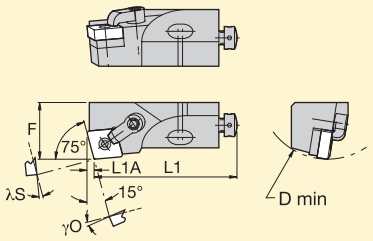
MCFN 0°





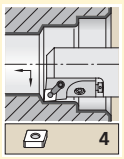
MCKN 15°

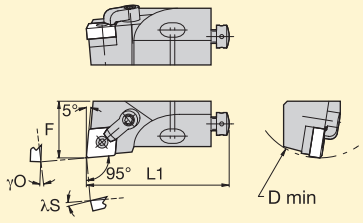




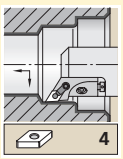
Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MCFN R/L 10CA3C	1.575	.551	1.97	-	-	-9.0	-9.0	**CN..322**	-	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**MS966**	5
MCFN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-9.0	**CN..322**	-	**KLC33**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**MS965**	5
MCFN R/L 12CA4C	1.969	.787	2.17	-	-	-9.0	-5.0	**CN..432**	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MCFN R/L 16CA4C	2.362	.984	2.48	-	-	-9.0	-5.0	**CN..432**	**ICSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MCFN R/L 20CA4C	2.756	.984	2.76	-	-	-9.0	-5.0	**CN..432**	**ICSN432**	**KLC46**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
						λS°	γO°												
MCKN R/L 12CA4C	1.969	.787	2.17	-	.121	-9.0	-5.0	**CN..432**	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MCKN R/L 16CA4C	2.362	.984	2.48	-	.121	-9.0	-5.0	**CN..432**	**ICSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MCKN R/L 20CA4C	2.756	.984	2.76	-	.121	-9.0	-5.0	**CN..432**	**ICSN432**	**KLC46**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4

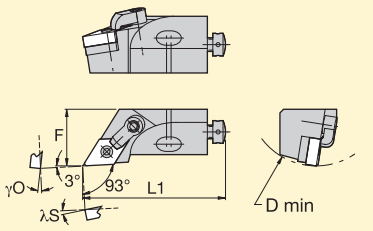
MCLN -5°





MDJN -3°



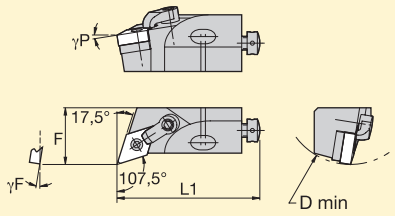


Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MCLN R/L 12CA4C	1.969	.787	2.17	-	-	-5.0	-9.0	**CN..432**	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MCLN R/L 16CA4C	2.362	.984	2.48	-	-	-5.0	-9.0	**CN..432**	**ICSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MCLN R/L 20CA4C	2.756	.984	2.76	-	-	-5.0	-9.0	**CN..432**	**ICSN432**	**KLC46**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
MCLNR25CA6C	3.937	1.260	3.94	-	-	-5.0	-9.0	**CN..643**	**ICSN633**	**KLC68**	9/64	**CKM35**	**STCC8**	19/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16
						λS°	γO°												
MDJN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-9.0	**DN..332**	-	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**MS965**	5
MDJN R/L 16CA4C	2.362	.984	2.48	-	-	-9.0	-9.0	**DN..432**	**IDSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MDJN R/L 20CA4C	2.756	.984	2.76	-	-	-8.5	-8.5	**DN..432**	**IDSN432**	**KLC46**	3/32	**CKM41**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4

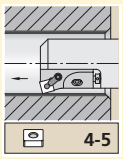
Order example:
Right hand: **MCFNR10CA3C**

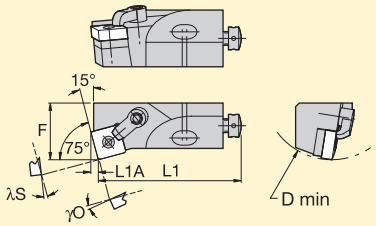
Left hand: **MCFNL10CA3C**

MDQN -17.5°



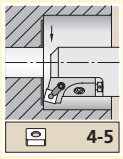
MSKN 15°

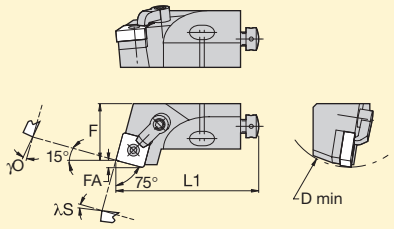




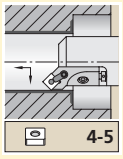
Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MDQN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-9.0	**DN..332**	**-**	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**MS965**	5
MDQN R/L 16CA3C	2.362	.984	2.48	-	-	-9.0	-9.0	**DN..332**	**IDSN322**	**KLC34L**	5/64	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**MS353**	6
MDQN R/L 16CA4C	2.362	.984	2.48	-	-	-9.0	-6.0	**DN..432**	**IDSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MDQN R/L 20CA4C	2.756	.984	2.76	-	-	-8.5	-8.5	**DN..432**	**IDSN432**	**KLC46**	3/32	**CKM41**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
						λS°	γO°												
MSKN R/L 10CA3C	1.575	.551	1.97	-	.088	-9.0	-5.0	**SN..322**	**-**	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**S624**	3/16
MSKN R/L 12CA4C	1.969	.787	2.17	-	.120	-9.0	-5.0	**SN..432**	**-**	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MSKN R/L 16CA4C	2.362	.984	2.48	-	.120	-9.0	-5.0	**SN..432**	**ISSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MSKN R/L 20CA5C	2.756	.984	2.76	-	.150	-9.0	-5.0	**SN..543**	**SKSN566K**	**KLC54**	3/32	**CKM37**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
MSKNR25CA6C	3.937	1.260	3.94	-	.180	-9.0	-5.0	**SN..643**	**ISSN633**	**KLC68**	9/64	**CKM35**	**STCC8**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16

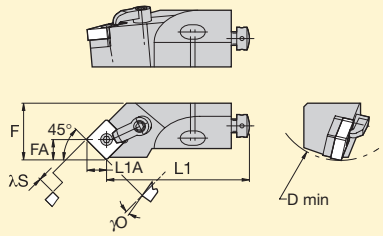
MSRN 15°





MSSN 45°





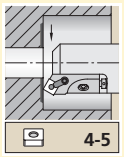
Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MSRNR10CA3C	1.575	.551	1.97	.088	-	-5.0	-9.0	SN..322	-	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**S624**	3/16
MSRN R/L 12CA4C	1.969	.787	2.17	.121	-	-5.0	-9.0	SN..432	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MSRN R/L 16CA4C	2.362	.984	2.48	.121	-	-5.0	-9.0	SN..432	**ISSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MSRN R/L 20CA5C	2.756	.984	2.76	.148	-	-5.0	-9.0	SN..543	**SKSN566K**	**KLC54**	3/32	**CKM37**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
						λS°	γO°												
MSSN R/L 10CA3C	1.575	.551	1.73	.252	.240	0.0	-13.0	SN..322	-	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**S624**	3/16
MSSN R/L 12CA4C	1.969	.787	1.85	.341	.328	0.0	-13.0	SN..432	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MSSN R/L 16CA4C	2.362	.984	2.09	.341	.328	0.0	-13.0	SN..432	**ISSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MSSN R/L 20CA5C	2.756	.984	2.36	.423	.404	0.0	-13.0	SN..543	**SKSN566K**	**KLC54**	3/32	**CKM37**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4

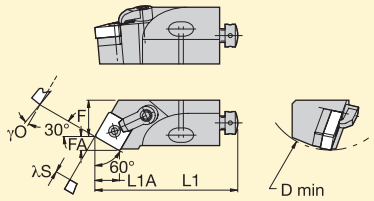
Order example:
Right hand: **MDQNR12CA3C**
Left hand: **MDQNL12CA3C**

KENLOC Cartridges

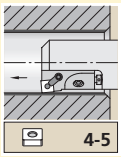
KENLOC Inserts

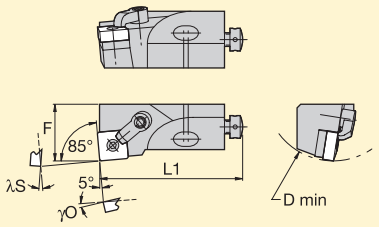
MSTN 30°





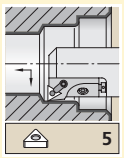
MSYN 5°

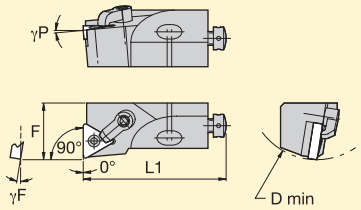




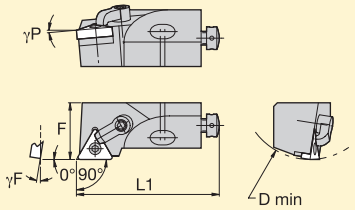
Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MSTN R/L 10CA3C	1.575	.354	1.97	.170	.294	0.0	-11.0	**SN..322**	-	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**S624**	3/16
MSTN R/L 12CA4C	1.969	.512	2.17	.232	.402	0.0	-11.0	**SN..432**	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MSTN R/L 16CA4C	2.362	.591	2.48	.232	.402	0.0	-11.0	**SN..432**	**ISSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
						λS°	γO°												
MSYN R/L 10CA3C	1.575	.551	1.97	-	-	-9.0	-5.0	**SN..322**	-	**KLC33**	5/64	**CKM36**	**STCC38**	5/64	**KUAC22**	5/64	**KUAM30**	**S624**	3/16
MSYN R/L 12CA4C	1.969	.787	2.17	-	-	-9.0	-5.0	**SN..432**	-	**KLC43**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MSYN R/L 16CA4C	2.362	.984	2.48	-	-	-9.0	-5.0	**SN..432**	**ISSN432**	**KLC46S**	3/32	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**S634**	1/4
MSYN R/L 20CA5C	2.756	.984	2.76	-	-	-9.0	-5.0	**SN..543**	**SKSN566K**	**KLC54**	3/32	**CKM37**	**STCC40**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
MSYN R/L 25CA6C	3.937	1.260	3.94	-	-	-9.0	-5.0	**SN..643**	**ISSN633**	**KLC68**	9/64	**CKM35**	**STCC8**	9/64	**KUAC27**	9/64	**KUAM33**	**S634**	1/4

MTFN 0°





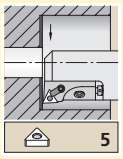
MTGN 0°

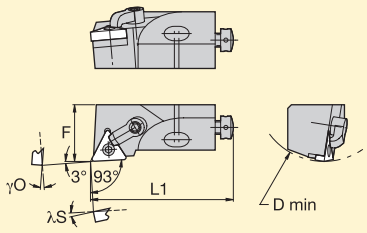


Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MTFN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-5.0	**TN..332**	-	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MTFN R/L 16CA3C	2.362	.984	2.48	-	-	-9.0	-5.0	**TN..332**	**ITSN322**	**KLC34L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM32**	**S634**	1/4
MTFN R/L 20CA4C	2.756	.984	2.76	-	-	-9.0	-5.0	**TN..432**	**ITSN433**	**KLC46**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
MTFNR25CA5C	3.937	1.260	3.94	-	-	-9.0	-5.0	**TN..543**	**ITSN534**	**KLC58**	1/8	**CKM38**	**STCC39**	1/4	**KUAC26**	1/8	**KUAM33**	**S364**	5/16
						γF°	γP°												
MTGN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-5.0	**TN..332**	-	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MTGN R/L 20CA4C	2.756	.984	2.76	-	-	-9.0	-5.0	**TN..432**	**ITSN433**	**KLC46**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
MTGNR25CA5C	3.937	1.260	3.94	-	-	-9.0	-5.0	**TN..543**	**ITSN534**	**KLC58**	1/8	**CKM38**	**STCC39**	1/4	**KUAC26**	1/8	**KUAM33**	**S364**	5/16

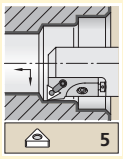
Order example:
Right hand: **MSTNR10CA3C**
Left hand: **MSTNL10CA3C**

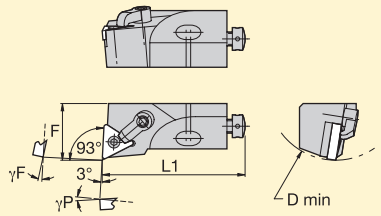
MTJN -3°





MTUN -3°

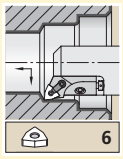


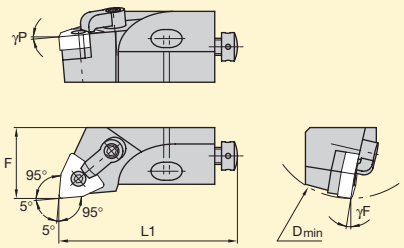


Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MTJN R/L 12CA3C	1.969	.787	2.17	-	-	-5.0	-9.0	**TN..332**	**-**	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MTJN R/L 16CA3C	2.362	.984	2.48	-	-	-5.0	-9.0	**TN..332**	**ITSN322**	**KLC34L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM32**	**S634**	1/4
MTJN R/L 20CA4C	2.756	.984	2.76	-	-	-5.0	-9.0	**TN..432**	**ITSN433**	**KLC46**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**	**S364**	5/16

						γF°	γP°												
MTUN R/L 12CA3C	1.969	.787	2.17	-	-	-9.0	-5.0	**TN..332**	**-**	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**S624**	3/16
MTUN R/L 16CA3C	2.362	.984	2.48	-	-	-9.0	-5.0	**TN..332**	**ITSN322**	**KLC34L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM32**	**S634**	1/4
MTUN R/L 20CA4C	2.756	.984	2.76	-	-	-9.0	-5.0	**TN..432**	**ITSN433**	**KLC46**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4

MWLN -5°





Catalog number Right hand/ Left hand	Dmin	F	L1	FA	L1A	γP°	γF°	Gage Insert	Shim	Lock Pin	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw	Mount-ing Screw	Hex (inch/ mm)
MWLN R/L 10CA3C	1.575	.551	1.97	-	-	-5.0	-10.0	**WN..332**	**-**	**KLC33L**	5/64	**CKM36**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**	**MS966**	5
MWLN R/L 12CA3C	1.969	.787	2.17	-	-	-5.0	-9.0	**WN..332**	**-**	**KLC33L**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM31**	**MS965**	5
MWLN R/L 16CA3C	2.362	.984	2.48	-	-	-5.0	-9.0	**WN..332**	**IWSN322**	**KLC34L**	5/64	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM32**	**MS353**	6
MWLN R/L 20CA3C	2.756	.984	2.76	-	-	-5.0	-9.0	**WN..332**	**IWSN322**	**KLC34L**	5/64	**CKM34**	**STCC9**	3/32	**KUAC25**	3/32	**KUAM33**	**MS353**	6

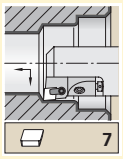
Order example:
Right hand: **MTJNR12CA3C**

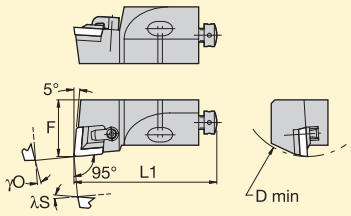
Left hand: **MTJNL12CA3C**

KENDEX Cartridges

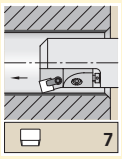
KENDEX positive Inserts

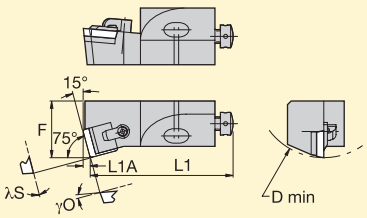
CCLP -5°





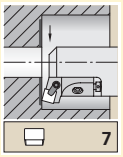
CSKP 15°

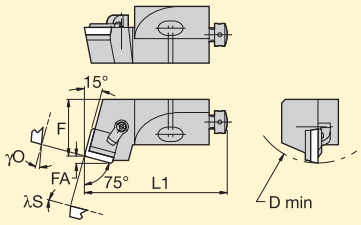




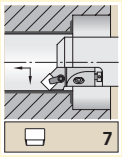
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw
CCLP R/L 12CA4C	1.969	.787	2.17	-	-	3.5	3.5	**CP.422**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
CCLP R/L 20CA4C	2.756	.984	2.76	-	-	3.5	3.5	**CP.422**	**SM891**	**CS111**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM33**
						λS°	γO°										
CSKP R/L 10CA3C	1.575	.551	1.97	-	.09	0.0	5.0	**SP.322**	-	-	-	**CKM34**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CSKP R/L 12CA4C	1.969	.787	2.17	-	.12	0.0	5.0	**SP.422**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**

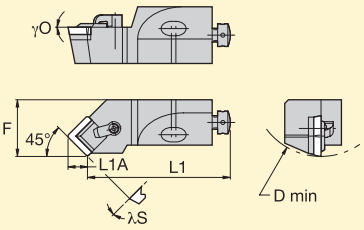
CSRP -15°





CSSP 45°



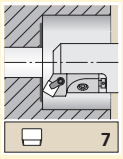


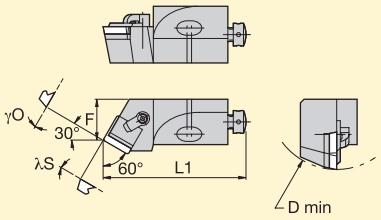
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw
CSRP R/L 10CA3C	1.575	.551	1.97	.09	-	0.0	0.0	**SP.322**	-	-	-	**CKM34**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CSRP R/L 12CA4C	1.969	.787	2.17	.12	-	0.0	3.0	**SP.422**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
CSRP R/L 20CA4C	2.756	.984	2.76	.12	-	0.0	3.0	**SP.422**	**SM840**	**CS109PKG**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM33**
						λS°	γO°										
CSSP R/L 10CA3C	1.575	.551	1.73	-	.24	0.0	0.0	**SP.322**	-	-	-	**CKM34**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CSSP R/L 12CA4C	1.969	.787	1.85	-	.33	0.0	0.0	**SP.422**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
CSSP R/L 20CA4C	2.756	.984	2.36	-	.33	0.0	0.0	**SP.422**	**SM840**	**CS109PKG**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM33**

Order example:
Right hand: **CCLPR12CA4C**

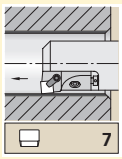
Left hand: **CCLPL12CA4C**

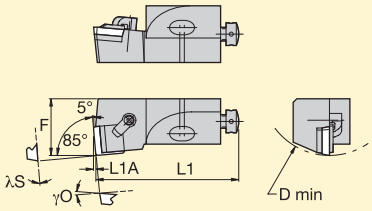
CSTP 30°





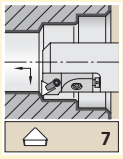
CSYP 5°

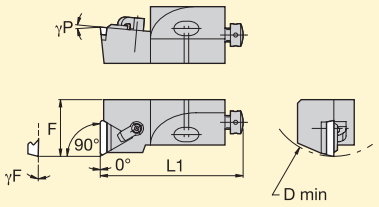




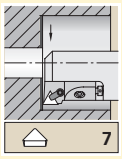
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Shim	Shim screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw
CSTP R/L 10CA3C	1.575	.354	1.97	-	-	0.0	0.0	**SP.322**	-	-	-	**CKM34**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CSTP R/L 12CA4C	1.969	.512	2.17	-	-	0.0	0.0	**SP.422**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
						λS°	γO°										
CSYP R/L 10CA3C	1.575	.551	1.97	-	.03	0.0	5.0	**SP.322**	-	-	-	**CKM34**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**

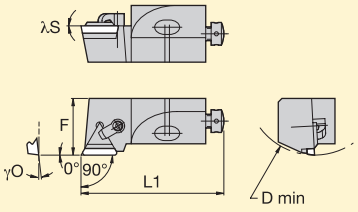
CTFP 0°





CTGP 0°





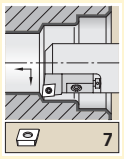
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Shim	Shim screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)	Radial Adj. Screw	Hex (inch)	Axial Adj. Screw
CTFPL10CA2C	1.575	.551	1.97	-	-	0.0	5.0	**TP.221**	-	-	-	**CKM36**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CTFPL12CA3C	1.969	.787	2.17	-	-	0.0	5.0	**TP.322**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
CTFPL16CA3C	2.362	.984	2.48	-	-	0.0	5.0	**TP.322**	**SM841**	**CS109PKG**	5/64	**CKM34**	**STCC38**	5/64	**KUAC24**	5/64	**KUAM32**
CTFPL20CA4C	2.756	.984	2.76	-	-	0.0	5.0	**TP.432**	**SM837**	**CS125PKG**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**
CTFPR25CA5C	3.937	1.260	3.94	-	-	0.0	5.0	**TP.543**	**SM899**	**CS132PKG**	1/8	**CKM38**	**STCC39**	1/8	**KUAC26**	1/8	**KUAM33**
						λS°	γO°										
CTGPL10CA2C	1.575	.551	1.97	-	-	0.0	3.0	**TP.221**	-	-	-	**CKM36**	**STCC38**	5/64	**KUAC28**	5/64	**KUAM30**
CTGPL12CA3C	1.969	.787	2.17	-	-	0.0	3.0	**TP.322**	-	-	-	**CKM34**	**STCC9**	3/32	**KUAC23**	3/32	**KUAM31**
CTGPL20CA4C	2.756	.984	2.76	-	-	0.0	3.0	**TP.432**	**SM837**	**CS125PKG**	3/32	**CKM35**	**STCC37**	3/32	**KUAC25**	3/32	**KUAM33**
CTGPR25CA5C	3.937	1.260	3.94	-	-	0.0	3.0	**TP.543**	**SM899**	**CS132PKG**	1/8	**CKM38**	**STCC39**	1/8	**KUAC26**	1/8	**KUAM33**

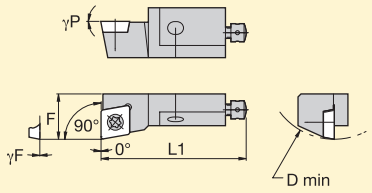
Order example:
Right hand **CSTPR10CA3C**
Left hand: **CSTPL10CA3C**

SCREW-ON Cartridges

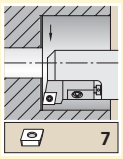
SCREW-ON Inserts

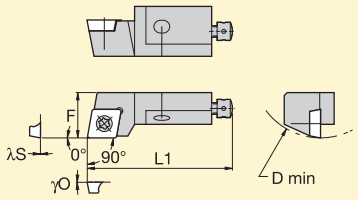
SCFP 0°





SCGP 0°

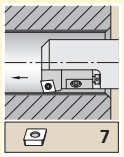


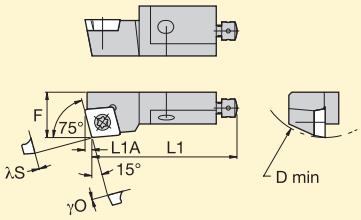


Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Torx
SCFP R/L 06CA05	.787	.315	.98	-	-	0.0	0.0	**CP..18151**	**MS1152**	T7	**KUAM34**	1,5	**KUAM35**	**MS1200**	T10
SCFP R/L 08CA06	.984	.394	1.26	-	-	0.0	0.0	**CP..2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
						λS°	γO°								
SCGP R/L 06CA05	.787	.315	.98	-	-	0.0	0.0	**CP..18151***	**MS1152**	T7	**KUAM34**	1,5	**KUAM35**	**MS1200**	T10
SCGP R/L 08CA06	.984	.394	1.26	-	-	0.0	0.0	**CP..2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15

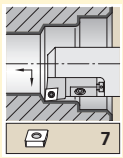
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.

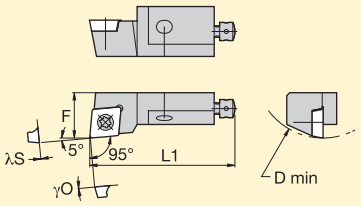
SCKP 15°





SCLC -5°



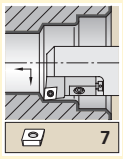


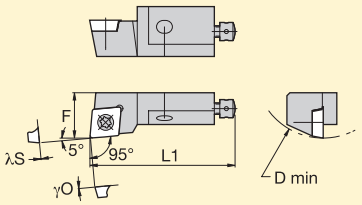
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Torx
SCKP R/L 08CA06	.984	.394	1.26	-	.063	0.0	0.0	**CP..2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
						λS°	γO°								Hex (mm)
SCLC R/L 12CA12	1.969	.787	2.17	-	-	0.0	0.0	**CC..432**	**MS1157**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
SCLC R/L 16CA12	2.362	.984	2.48	-	-	0.0	0.0	**CC..432**	**MS1157**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0

*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.

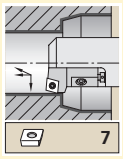
Order example:
Right hand: **SCFPR06CA05**
Left hand: **SCFPL06CA05**

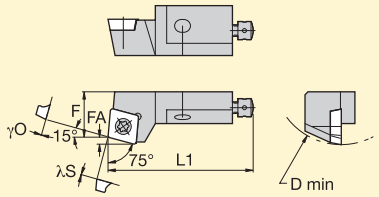
SCLP -5°





SCRP 15°

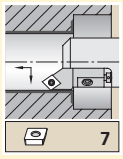


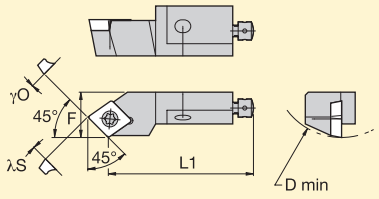


Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm) or Torx
SCLP R/L 06CA05	.787	.315	.98	-	-	0.0	0.0	**CP.18151**	**MS1152**	T7	**KUAM34**	1,5	**KUAM35**	**MS1200**	T10
SCLP R/L 08CA06	.984	.394	1.26	-	-	0.0	0.0	**CP.2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
SCLP R/L 10CA09	1.575	.551	1.97	-	-	0.0	0.0	**CP.3252****	**MS1155**	T15	**KUAM23**	2,5	**KUAM30**	**MS966**	5
						λS°	γO°								
SCRP R/L 08CA06	.984	.394	1.26	.063	-	0.0	0.0	**CP.2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15

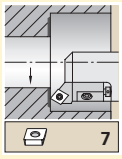
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. CPMT/CPGT/CPGW-32.5_).
90° countersunk hole inserts (i.e. CPGM/CPGB-32.5_) do not fit this tool.

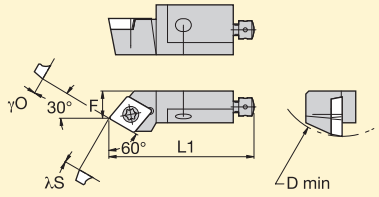
SCSP 45°





SCTP 30°





Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Torx
SCSP R/L 06CA05	.787	.315	.83	-	-	0.0	0.0	**CP.18151**	**MS1152**	T7	-	-	**KUAM35**	**MS1200**	T10
SCSP R/L 08CA06	.984	.394	1.10	-	-	0.0	0.0	**CP.2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
						λS°	γO°								
SCTP R/L 06CA05	.787	.217	.98	-	-	0.0	0.0	**CP.18151**	**MS1152**	T7	-	-	**KUAM35**	**MS1200**	T10
SCTP R/L 08CA06	.984	.236	1.26	-	-	0.0	0.0	**CP.2151***	**MS1152**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15

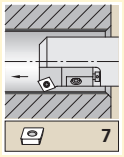
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.

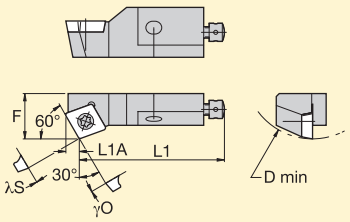
Order example:
Right hand: **SCLPR06CA05**
Left hand: **SCLPL06CA05**

SCREW-ON Cartridges

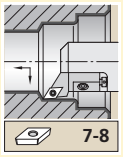
SCREW-ON Inserts

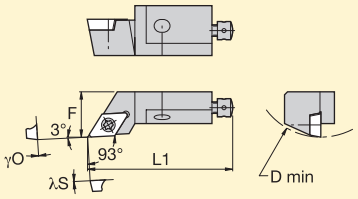
SCWP 30°





SDJP -3°

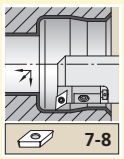


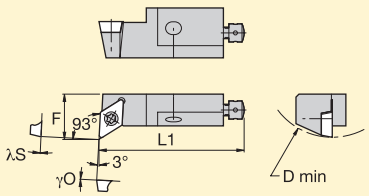


Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Torx
SCWP R/L 08CA06	.984	.394	1.26	-	.118	0.0	0.0	**CP..2151***	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
						λS°	γO°								Hex (mm)
SDJP R/L 10CA07	1.575	.551	1.97	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0

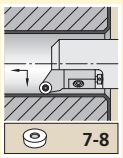
*NOTE: ANSI/ISO compatible 60° countersunk hole insert.
This tool will also accept CPGM/CPGT/CPGW-21.5_ inserts.

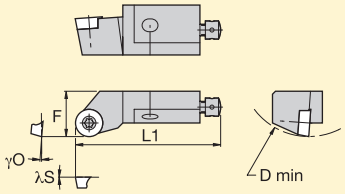
SDUP -3°





SRGC

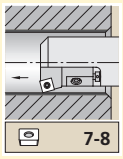


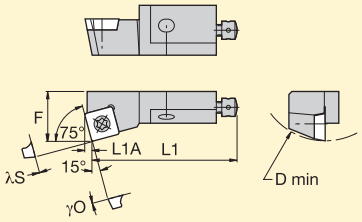


Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm)
SDUPR10CA07	1.575	.551	1.97	-	-	0.0	0.0	**DP..2151**	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
						λS°	γO°								Hex (mm) or Torx
SRGCR08CA06	.984	.394	1.26	-	-	0.0	-4.0	**RC..0602M0**	**MS1153**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
SRGCR10CA08	1.575	.551	1.97	-	-	0.0	-3.0	**RC..0803M0**	**MS1154**	T9	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
SRGCR12CA10	1.969	.787	2.17	-	-	0.0	-3.0	**RC..10T3M0**	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0

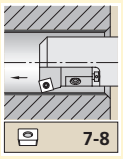
Order example:
Right hand: **SCWPR08CA06**
Left hand: **SCWPL08CA06**

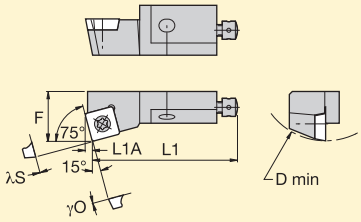
SSKC 15°





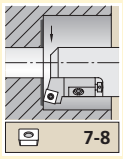
SSKP 15°

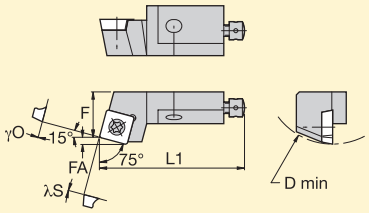




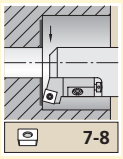
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm)
SSKC R/L 12CA12	1.969	.787	2.17	-	.121	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
SSKC R/L 16CA12	2.362	.984	2.48	-	.121	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0
						λS°	γO°								
SSKP R/L 10CA09	1.575	.551	1.97	-	.881	0.0	0.0	**SP.3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
SSKP R/L 12CA09	1.969	.787	2.17	-	.881	0.0	0.0	**SP..3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0

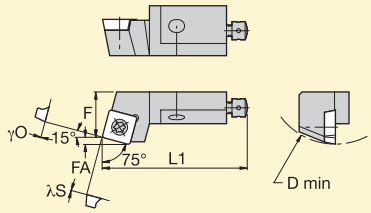
SSRC 15°





SSRP 15°





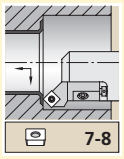
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm)
SSRC R/L 12CA12	1.969	.787	2.17	.121	-	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
SSRC R/L 16CA12	2.362	.984	2.48	.121	-	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0
						λS°	γO°								
SSRP R/L 10CA09	1.575	.551	1.97	.881	-	0.0	0.0	**SP.3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
SSRP R/L 12CA09	1.969	.787	2.17	.881	-	0.0	0.0	**SP..3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0

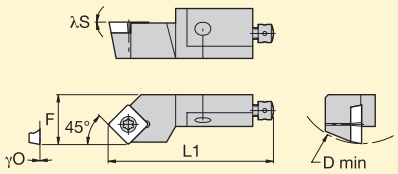
Order example:
Right hand: **SSKCR12CA12**
Left hand: **SSKCL12CA12**

SCREW-ON Cartridges

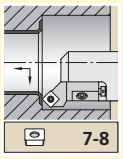
SCREW-ON Inserts

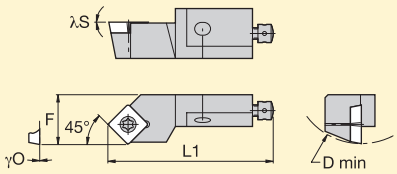
SSSC 45°





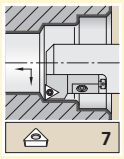
SSSP 45°

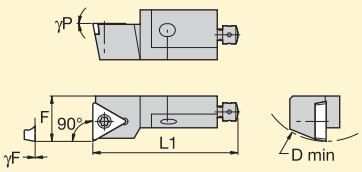




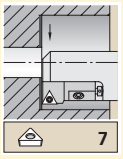
Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm)
SSSC R/L 12CA12	1.969	.787	1.85	-	-	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
SSSC R/L 16CA12	2.362	.984	2.09	-	-	0.0	-3.0	**SC..432**	**MS1157**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0
						λS°	γO°								
SSSP R/L 10CA09	1.575	.551	1.73	-	-	0.0	0.0	**SP..3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
SSSP R/L 12CA09	1.969	.787	1.85	-	-	0.0	0.0	**SP..3252**	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0

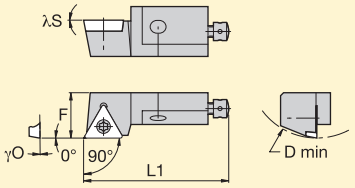
STFP





STGP





Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	γF°	γP°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm) or Torx
STFP R/L 08CA09	.984	.394	1.26	-	-	0.0	0.0	**TP..18151**	**MS1152**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
STFP R/L 10CA11	1.575	.551	1.97	-	-	0.0	0.0	**TP..2151***	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
STFP R/L 12CA16	1.969	.787	2.17	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
STFP R/L 16CA16	2.362	.984	2.48	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0
						λS°	γO°								
STGP R/L 08CA09	.984	.394	1.26	-	-	0.0	0.0	**TP..18151**	**MS1152**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
STGP R/L 10CA11	1.575	.551	1.97	-	-	0.0	0.0	**TP..2151***	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
STGP R/L 12CA16	1.969	.787	2.17	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
STGP R/L 16CA16	2.362	.984	2.48	-	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0

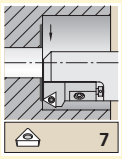
*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. TPMT/TPGT/TPGW-32.5_).
90° countersunk hole inserts (i.e. TPGM/TPGB-32.5_) do not fit this tool.

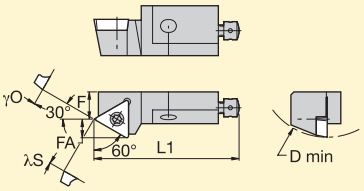
Order example:
Right hand: **SSSCR112CA12**

Left hand: **SSSCL112CA12**

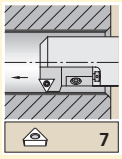
SCREW-ON Inserts

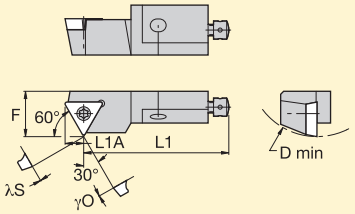
STTP 30°





STWP 30°

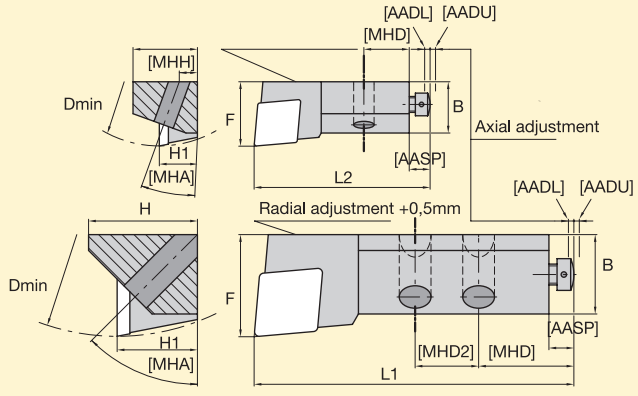




Catalog number Right hand/Left hand	Dmin	F	L1	FA	L1A	λS°	γO°	Gage Insert	Insert Screw	Torx	Radial Adj. Screw	Hex (mm)	Axial Adj. Screw	Mounting Screw	Hex (mm) or Torx
STTP R/L 08CA09	.984	.236	1.26	.169	-	0.0	0.0	**TP..18151**	**MS1152**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
STTP R/L 10CA11	1.575	.354	1.97	.196	-	0.0	0.0	**TP..2151***	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
STTP R/L 12CA16	1.969	.512	2.17	.284	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
STTP R/L 16CA16	2.362	.591	2.48	.284	-	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0
						λS°	γO°								
STWP R/L 08CA09	.984	.394	1.10	-	.169	0.0	0.0	**TP..18151**	**MS1152**	T7	**KUAM28**	2,0	**KUAM20**	**MS1199**	T15
STWP R/L 10CA11	1.575	.551	1.73	-	.196	0.0	0.0	**TP..2151***	**MS1153**	T7	**KUAM23**	2,5	**KUAM30**	**MS966**	5,0
STWP R/L 12CA16	1.969	.787	1.85	-	.284	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM23**	2,5	**KUAM31**	**MS965**	5,0
STWP R/L 16CA16	2.362	.984	2.09	-	.284	0.0	0.0	**TP..3252****	**MS1155**	T15	**KUAM27**	4,0	**KUAM32**	**MS353**	6,0

*NOTE: ANSI/ISO compatible 60° countersunk hole insert. This tool will also accept TPGM/TPGT/TPGW-21.5_ inserts.
**NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e. TPMT/TPGT/TPGW-32.5_). 90° countersunk hole inserts (i.e. TPGM/TPGB-32.5_) do not fit this tool.

Cartridge Dimensions



NOTE: All dimensions below in mm

Size of cartridge	H1	F	H	B	L1	[MHD]	[MHD2]	[AASP]	[AADL] [AADU]	[MHH]	[Dmin]
06	6	8	8,5	6	25	12	-	4,5	0,40	3,5	20
08	8	10	11,0	7	32	17	-	6,0	0,75	4,5	25
10	10	14	14,0	10	50	20	-	8,0	0,75	5,0	40
12	12	20	19,0	14	55	20	-	8,0	0,75	6,0	50
16	16	25	22,0	18	63	25	-	8,0	1,50	-	60
20	20	25	25,0	18	70	30	-	10,0	1,50	-	70
25	25	32	32,0	24	100	30	20	10,0	1,50	-	100

Order example:
Right hand: **STTPR08CA09**
Left hand: **STTPL08CA09**

Engineering Your Competitive Edge®

KENNAMETAL®

Grooving and Cut-Off Tools

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Grade System for Grooving and Cut-Off Applications **B4**

TOP NOTCH™ – Grooving **B6**

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Toolholders B24
Boring Bars B29
Boring Heads and Cartridges B33
Technical Data B34

A4™ – Groove & Turn **B36**

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Modular System B77
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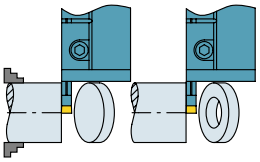
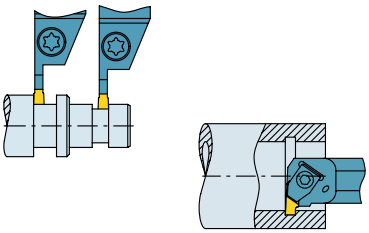
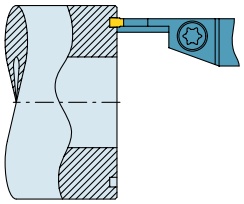
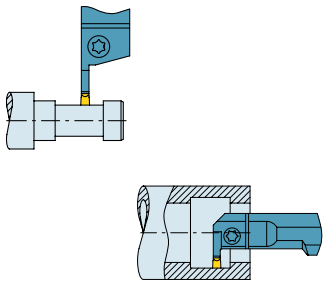
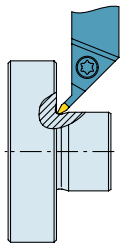
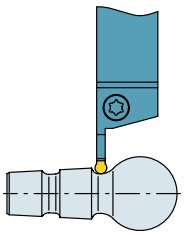
KENNA PERFECT Selection Guide B88
Inserts B91
Toolholders B95
Blades and Blocks B96
Technical Data B98

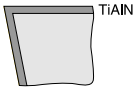
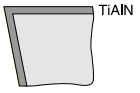
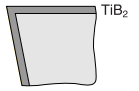
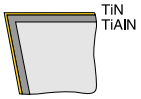
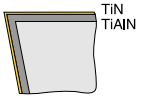
Grooving Application Guide

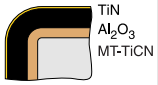
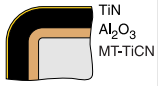
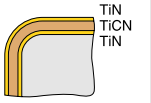
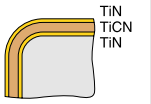
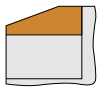
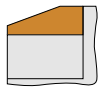
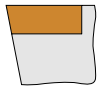
	Cut-Off	Grooving	Face Grooving
Application			
TOP NOTCH Grooving generally recommended for cutting depth/ width ratios of 1.5 or less		**Inserts** • cutting widths from .031 to .375 inch (0,8 to 9,5 mm) • cutting depths from .050 to .375 inch (1,27 to 9,5 mm) • chip control, positive rake, and neutral flat top inserts are available **OD Application** • integral shank toolholders and KM heads are available **ID Application** • boring bars with a .440 inch (11,2 mm) minimum bore diameter	**Minimum Face Groove Diameter Capability** • standard inserts: 2.125 to 13 inch (54 to 330 mm) depending on size • NF/NFD face grooving inserts: .940 to 2.25 inch (24 to 57 mm) • all have unlimited maximum diameter **Cutting Width Range** • standard inserts: .031 to .375 inch (0,8 to 9,5 mm) • NF/NFD face grooving inserts: .125 to .375 inch (3,2 to 9,5 mm) **Cutting Depth Range** • standard inserts: .050 to .375 inch (1,27 to 9,5 mm) • NF/NFD face grooving inserts: .150 to .250 inch (3,8 to 6,35 mm)
A4 Groove & Turn	**Cut-off Capabilities** • .118 inch to .157 inch (3 mm to 4 mm) cut-off width • satisfies extreme demands for rigidity and dimensional accuracy • integral screw-clamping toolholders with .670 inch (17 mm) maximum cutting depth available • economical double-edge inserts	**Inserts** • cutting widths from .118 to .396 inch (3,0 to 10,05 mm) • precision ground and molded inserts... all available with chip control **OD Application** • integral shank toolholders and modular KM heads are available • cutting depths from .55 to 1.02 inch (14 to 26 mm) **ID Application** • boring bars with .984 inch (25 mm) minimum bore diameter • cutting widths from .118 to .250 inch (3,0 to 6,35 mm)	**Minimum Face Groove Diameter Capability** • 1.417 inch (36 mm) minimum diameter • unlimited maximum diameter **Cutting Width Range** • cutting widths from .118 to .199 inch (3,0 to 5,05 mm) **Cutting Depth Range** • cutting depths of .276 to .748 inch (7 to 19 mm)
A3 Deep Grooving generally recommended for cutting depth/ width ratios of more than 1.5		**Inserts** • cutting widths from .093 to .396 inch (2,36 to 10,05 mm) • precision ground and molded inserts... all available with chip control **OD Application** • integral shank toolholders and modular KM heads are available • cutting depths from .394 to 1.26 inch (10 to 32 mm) **ID Application** • boring bars with 1.26 inch (32 mm) minimum bore diameter	**Minimum Face Groove Diameter Capabilities** • .984 inch (25 mm) minimum diameter unlimited maximum diameter **Cutting Width Range** • cutting widths from .118 to .250 inch (3,0 to 6,35 mm) **Cutting Depth Range** • cutting depths from .393 to 1.26 inch (10 to 32 mm)
A2 Cut-off	**Cut-off Capabilities** • cut-off widths from .063 to .315 inch (1,6 to 8 mm) • left- and right-hand styles with 6° to 16° lead angles • self-clamping blades and screw-clamping integral shank toolholders are available • single-edge inserts for maximum depth capability		

	Groove & Turn	Undercutting	Profiling
Application			
TOP NOTCH Grooving generally recommended for cutting depth/ width ratios of 1.5 or less		**Top Notch Undercutting Capability** • undercutting insert widths from .094 to .156 inch (2,4 - 4 mm) • economical double-ended inserts	**Recommended for Moderate to Heavy Stock Removal at Shallow Profile Depths** **Full Radius Inserts** • cutting widths from .062 to .250 inch (1,57 to 6,35 mm) • cutting depths of .094 to .250 inch (2,39 to 6,35 mm) **OD Application** • integral shank toolholders and KM heads are available
A4 Groove & Turn	**Recommended for Heavy Stock Removal, Particularly in Turning Applications** **Inserts** • cutting widths: .118 to .396 inch, (3,0 to 10,05 mm) • double-ended, precision ground, and molded inserts...all available with chip control **OD Application** • integral shank toolholders and modular KM heads are available • cutting depths from .55 to 1.02 inch (14 to 26 mm) **ID Application** • boring bars with .984 inch (25 mm) minimum bore diameter • cutting widths from .118 to .250 inch (3,0 to 6,35 mm)		**Recommended for Heavy Stock Removal** **Full Radius Inserts** • cutting widths from .118 to .396 inch (3,0 to 10,05 mm) **OD Application** • integral shank toolholders and modular KM heads are available • cutting depths from .55 to 1.02 inch (14 to 26 mm)
A3 Deep Grooving generally recommended for cutting depth/ width ratios of more than 1.5	**Recommended for Light Cutting** **Inserts** • cutting widths from .093 to .396 inch (2,36 to 10 mm) • precision ground and molded inserts, all available with chip control **OD Application** • integral shank toolholders and modular KM heads are available • cutting depths from .394 to 1.26 inch (10 to 32 mm) **ID Application** • boring bars with 1.26 inch (32 mm) minimum bore diameter	**Full Radius Undercutting** • full radius inserts with cutting widths from .093 to .315 inch (2,4 to 8 mm) at 45° lead angle **35° Insert Undercutting** • 35° V-form inserts for profiling undercuts • toolholder lead angles of 93° and 117.5°	**Recommended for Light Cutting** • full radius inserts with cutting widths from .118 to .315 inch (3 to 8 mm) • 1.26 inch (32 mm) maximum cutting depth • integral shank toolholders and modular KM heads are available • 35° V-form inserts are also available
A2 Cut-off			

Grade System for Grooving and Cut-Off Applications

Grade Selection Table

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
Uncoated Carbide Grades	**K313**	C3 – C4	**composition:** A hard, low binder content, unalloyed WC/Co fine-grained grade. **application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, nonmetals, and most high-temperature alloys. Superior thermal deformation and depth of cut notch resistance. The grain structure is well controlled for minimal pits and flaws which contributes to long, reliable service.	P M K N S H	
	K68	C3	**composition:** A hard, low binder content, unalloyed grade WC/Co fine-grained grade. **application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, nonmetals and as an alternative to the K313 grade on most high-temperature alloys. Use as a general purpose grade for non-ferrous materials.	P M K N S H	
	K1025 (KMF)	C2, C6	**composition:** It's a medium in hardness and binder content unalloyed WC, Co fine grained grade. **application:** For machining high-temp alloys, titanium and non-ferrous workpiece materials under unfavorable conditions.	P M K N S H	
PVD Coated Carbide Grades	**KC5010** NEW! improved	 C3, C4	**composition:** An advanced PVD TiAlN coating over a very deformation-resistant unalloyed carbide substrate. KC5010's new and improved coating allows for speeds to be increased by 50 to 100%. **application:** The KC5010 grade is ideal for finishing to general machining of most workpiece materials at higher speeds. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials and super alloys under stable conditions. It also performs well machining hardened and short chipping materials.	P M K N S H	
	KC5025 NEW! improved	 C2, C6	**composition:** An advanced PVD TiAlN coated grade with a tough, ultra-fine grain unalloyed substrate. **application:** For general purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium, and will handle interruptions and high feed rates.	P M K N S H	
	KC5410	 C3 – C4	**composition:** A PVD TiB2 coating over a very deformation-resistant unalloyed substrate. **application:** The KC5410 grade is designed for roughing, semifinishing and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys and magnesium alloys. The TiB2 coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow and outstanding wear resistance. In addition, built-up edge is prevented because this coating has a very low affinity for aluminum. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Molded inserts have a light hone.	P M K N S H	
	KU10T NEW!	 C3, C4	**composition:** An advanced PVD coating over a highly deformation-resistant carbide substrate. **application:** KU10T is an ideal general machining grade designed for medium to finishing operations. KU10T is excellent when machining most steels, stainless steels, cast irons, non-ferrous materials, and superalloys under stable conditions. KU10T is also effectively applied when machining hardened and short-chipping materials.	P M K N S H	
	KU25T NEW!	 C2, C6	**composition:** An advanced PVD coating over a tough and highly wear resistant carbide substrate. **application:** KU25T is ideal for finishing to general machining of most workpiece materials. With a higher cobalt content than KU10T, this grade provides the toughness needed to handle the demands of grooving, threading and cut-off operations. KU25T performs extremely well when machining most steels, stainless steels, cast irons, non-ferrous materials, and superalloys under stable conditions.	P M K N S H	

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
CVD Coated Carbide Grades	**KC9110**	 C3, C7	**composition:** A specially engineered, patent-pending cobalt-enriched carbide grade with thick K-MTCVD-TiCN coating layer, an Al_2O_3 layer of controlled grain size, and outer layers of TiCN and TiN for maximum wear resistance. **application:** An excellent finishing to medium machining grade for a variety of workpiece materials including most steels, ferritic and martensitic stainless steels, and cast irons. The specially engineered, cobalt-enriched substrate offers a balanced combination of deformation resistance and edge toughness, while the thick coating layers offer outstanding abrasion resistance and crater wear resistance for high-speed machining. The smooth coating provides good resistance to edge build-up and microchipping and produces excellent surface finishes. For rougher cutting, use the KC9125 grade.	P M K N S H	
	KC9125	 C2 – C3, C6 – C7	**composition:** A tough cobalt-enriched carbide grade with a newly designed multi-layer K-MTCVD TiCN-Al_2O_3-TiCN-TiN coating with superior interlayer adhesion. **application:** This is the industry's best general-purpose turning grade for most steels, and ferritic and martensitic stainless steels. The substrate design, with cobalt-enrichment, assures adequate deformation resistance along with excellent bulk toughness and insert edge strength. The coating layers offer good wear resistance over a wide range of machining conditions. The smoothness of the coating leads to reduced frictional heat, minimizes microchipping, and improves workpiece surface finishes. The KC9125 grade performs well in moderately heavy roughing to semi-finishing cuts. Use the KC9110 grade for finishing cuts.	P M K N S H	
	KU30T NEW!	 C5 – C6	**composition:** A tough cobalt-enriched substrate with a multilayered CVD coating. **application:** KU30T is a new grade designed specifically for the job shop industry where a wide range of workpiece materials is employed. With its tough cobalt-enriched substrate, KU30T performs very effectively in roughing through finishing operations. The post-coat treatment resists workpiece build-up and microchipping. For machining steels, cast irons, and stainless steels.	P M K N S H	
Cermet	**KT315**	 C3, C7	**composition:** A multi-layered, PVD TiN/TiCN/TiN, coated cermet turning grade. **application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications too. Provides long and consistent tool life and will produce excellent workpiece finishes.	P M K N S H	
PCBN – Polycrystalline Cubic Boron Nitride	**KD081**	 C4, C8	**composition:** A low content, PCBN tip brazed onto a carbide insert. **application:** Designed for roughing to finishing of hardened steels (>45 HRC). Use on bearing steel, hot and cold work tool steels, high-speed steels, die steels, case hardened steels, carburized and nitrided irons, and some hard coatings.	P M K N S H	
	KD120	 C8	**composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **application:** The primary application area for high CBN content grades is in roughing to finishing of fully pearlitic gray cast iron, chilled irons, high chrome alloys steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. Do not apply on finishing cuts in hardened steels. Available in regular size tips.	P M K N S H	
PCD - Polycrystalline Diamond	**KD100**	C4	**composition:** A polycrystalline diamond tip (PCD) brazed onto a carbide substrate. **application:** The KD100 grade is for general purpose turning. The cutting tool material contains a binder in addition to diamond particles. This makes the KD100 grade suitable for roughing to finishing all types of highly abrasive workpieces, including non-ferrous metals and non-metallics. Use as your first choice on high content silicon aluminum alloys (hypereutectic). Will generally produce good surface finishes. Provides the best mechanical shock resistance of the diamond tool materials. The cutting edge is sharp. This grade operates at very high speeds.	P M K N S H	
	KD1405 NEW!	 C4	**composition:** A pure CVD deposited diamond sheet tool direct brazed to a carbide substrate. **application:** KD1405 is Kennametal's and the industry's most abrasion resistant tool material for non-ferrous and non-metallic materials. KD1405 is best applied when abrasion resistance is the desired benefit. KD1405 is not as tough as KD100, but can withstand moderate interruptions when turning and traditional face milling operations.	P M K N S H	

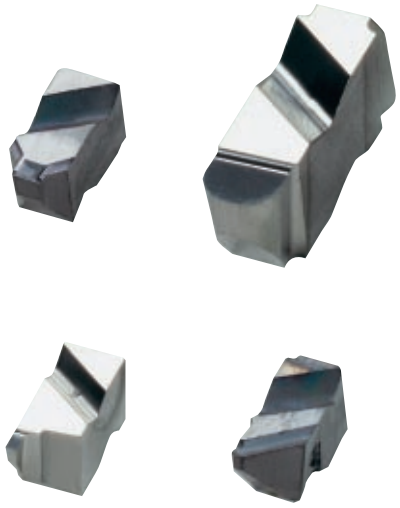
Engineering Your Competitive Edge®

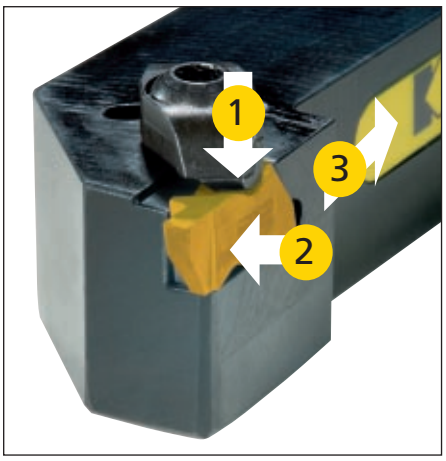
KENNAMETAL®

TOP NOTCH Grooving ...

... the proven solution for high productivity!

- New improved PVD TiAlN-coated grades are designed to cut a variety of workpiece materials.
- New CVD KENNA PERFECT and KENNA UNIVERSAL grades.
- Rigid clamping securely locks insert in place through the toughest cuts.
- Versatile design enables one system to handle O.D. and I.D. grooving, face grooving, back turning, undercutting, and even threading operations.
- Chip control inserts provide excellent chip evacuation in grooving, and offer better control in multi-directional turning.





Our rigid clamping design prevents insert movement during high-feed rate applications. This benefit ensures excellent surface finish, improved productivity, and superior tool life, and promotes perfect concentricity. The rugged bridge clamp generates locking forces in three directions to provide superior resistance to side thrust and tangential forces.

KENNA PERFECT – TOP NOTCH Grooving

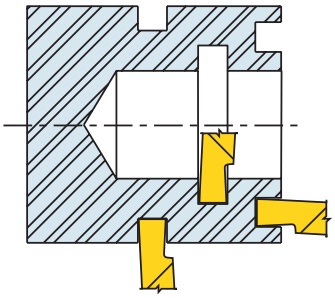
5 Easy Steps to Greater Productivity

What you need to know:

- groove depth, width, and profile
- material to be machined
- application to be performed (face, OD, or ID grooving)
- toolholder requirements (ie: KM, square shank, right/left)

1st Step – Choose Your System Based on the Groove Depth Required

TOP NOTCH

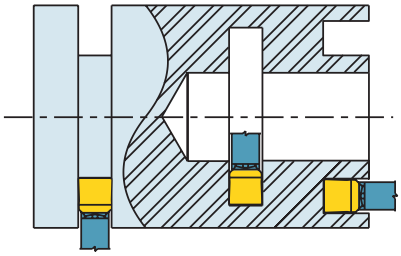


Grooving

grooving depth ≤ 1.5 x grooving width

Review system capability chart and proceed to step 2.

A3 or A4



Deep Grooving

grooving depth ≥ 1.5 x grooving width

See A3 Deep Grooving page B64 or A4 Groove & Turn page B38.

TOP NOTCH Grooving for internal, external, and face grooving applications

System Capabilities

		inch (mm) minimum	maximum
OD / ID Grooving	width depth	.031 (0,79) .050 (1,27)	.375 (9,53) .375 (9,53)
Face Grooving	width depth	.125 (3,18) .150 (3,81)	.375 (9,53) .250 (6,35)
Internal Grooving Dia.		.440 (11,2)	–
Face Grooving Diameter	standard deep	.940 (23,9) 1.875 (47,6)	– –
Deep OD / ID Grooving	width depth	.062 (1,57) .125 (3,18)	.250 (6,35) .500 (12,70)
Deep Face Grooving	width depth	.125 (3,18) .250 (6,35)	.250 (6,35) .500 (12,70)

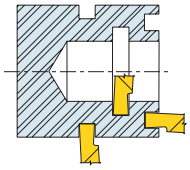
2nd Step – Choose Your Toolholder Based on the Application

Note: Toolholders are available as conventional square shank versions as well as quick-change versions.
The insert size must match the gage insert of your toolholder selection.

OD and face grooving applications –> see pages B24-B27
ID grooving applications –> see pages B29-B33

3rd Step – Select Chipbreaker Style and Feed Rate

Chipbreaker and Feed Rates – in/rev (mm/rev)

Workpiece Material and Application		Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Material
	First Choice	**NG-K** .003 - .011 (0,08 - 0,28)	**NG-K** .0025 - .008 (0,07 - 0,20)	**NG** .004 - .012 (0,01 - 0,30)	**NGP** .004 - .012 (0,01 - 0,30)	**NG-K** .0025 - .008 (0,07 - 0,20)	**NG** (CBN tipped) .002 - .004 (0,05 - 0,10)
	Alternative Choice	**NG** .004 - .012 (0,10 - 0,30)	**NGP** .004 - .009 (0,10 - 0,23)	**NG-K** .003 - .011 (0,08 - 0,28)	**NG-K** .003 - .012 (0,08 - 0,30)	**NGP** .004 - .008 (0,10 - 0,20)	–

-K Chipbreaker inserts

Flat-top inserts

Positive rake inserts

4th Step – Select Grade and Speed

Recommendations for Grade and Speed Selection – sfm (m/min)

	Machining Condition	Workpiece Material: Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Material
KENNA PERFECT	**high-performance for optimal conditions** (clean cuts, good machine condition, higher speed capability)	**KC9110** 400 - 1200 (120 - 370)	**KC5010** 250 - 750 (80 - 230)	**KC9110** 400 - 1200 (120 - 370)	**KD1405** 800 - 10000 (240 - 3050)	**KC5010** 50 - 400 (20 - 120)	**KD081** 300 - 500 (90 - 150)
		KT315 330 - 750 (100 - 230)	**KT315** 230 - 650 (70 - 200)	**KC5010** 250 - 750 (80 - 230)	**KD100** 600 - 5000 (180 - 1520)	–	–
	general purpose (first choice for general machining)	**KC9110** 400 - 1000 (120 - 300)	**KC5025** 160 - 400 (50 - 120)	**KC9110** 400 - 1000 (120 - 300)	**KC5410** 500 - 3000 (150 - 910)	**KC5025** 35 - 200 (10 - 60)	**KD081** 250 - 450 (80 - 140)
	unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed, I.D. grooving)	**KC5025** 180 - 450 (50 - 140)	**KC5025** 130 - 300 (40 - 90)	**KC5025** 200 - 500 (60 - 150)	**KC5025** 200 - 1000 (60 - 300)	**KC5025** 35 - 150 (10 - 50)	**KD120** 200 - 350 (60 - 110)
	KENNA UNIVERSAL	**KU30T** 200 - 650 (60 - 200)	**KU10T** 150 - 550 (50 - 170)	**KU30T** 200 - 650 (60 - 200)	**KU10T** 500 - 2400 (150 - 730)	**KU10T** 50 - 360 (20 - 110)	–

5th Step – Select Insert and Holder from Catalog Pages

Note: The insert size must match the gage insert size of your toolholder selection.

Example for TOP NOTCH – Grooving:

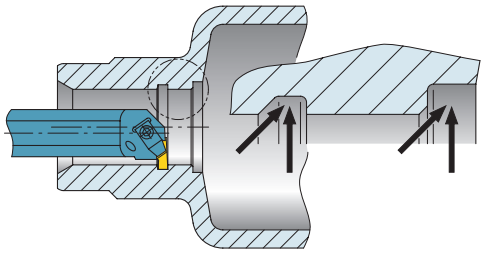
material: low-alloyed steel
groove depth: .079 in. (2 mm)
groove width: .118 in. (3 mm)
Operation:
I.D. cut, limited speed capability, plunge groove and chamfer

Congratulations!

Recommendation:

insert: NG2M300RK
grade: KC5025
insert width: .118 in. (3 mm)
insert size: 2

toolholder: A12NEL2 (inch)
A20QNNTOL2 (metric)
gage insert: N.2R

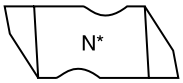


speed: 400 sfm (120 m/min)
feed: .006 ipr (0,15 mm)

You have successfully maximized your productivity by selecting the best TOP NOTCH insert geometry, grade, and cutting specifications for your application!

TOP NOTCH Grooving Insert Identification System

N -Top Notch



1. Type of Insert

N

2. Insert Style

B – blank (for special forms)
F – face grooving
G – grooving
P – back turning
R – full radius
U – undercutting (or relieving)
V – Poly Vee

G

D – deep grooving
P – positive
C – groove and chamfer

3. Additional Information

P

4. Insert Size

insert number	W1 (in)	W1 (mm)
1	.100	2,54
2	.150	3,81
3	.195	4,95
4	.255	6,48
5	.380	9,65
6	.383	9,73

3

M – metric insert groove width
C – circlip groove insert width is nominal circlip size
☐ – (blank) indicates inch width insert

5. Size Identification

125

6. Groove Size**

Position pertains to groove width for F, G, and U-style inserts; radii for R-style grooving inserts; and circlip size for groove and chamfer inserts. Dimension in .001 inch or 0,01 mm.
Metric example: 3,25 mm width groove or radius equals "325" catalog position number
Inch example: 1/32" width groove or radius equals "031" catalog position number
Width Tolerance: ± .001 inch (± 0,025 mm) unless otherwise specified

L – left
R – right

7. Hand of Insert

R

8. Cutting Depth

Shown for groove and chamfer inserts in 0,01 mm increments

K – standard chip control

9. Chipbreaker Design

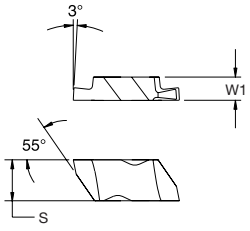
K

10. Definition of Inserts

groove size "J" or "L" – for Poly Vee inserts
"I" indicates internal face grooving insert

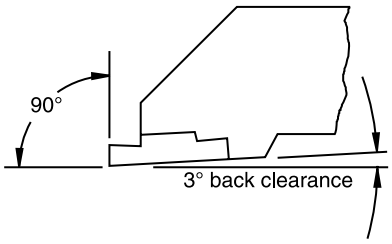
*Kennametal proprietary identification system
**Omit position for Top Notch NB-style blanks.

TOP NOTCH Threading and Grooving Insert Dimensions



insert size	S		W1	
	inch	mm	inch	mm
1	.100	2,54	.100	2,54
2	.219	5,56	.150	3,81
3	.344	8,74	.195	4,95
4	.453	11,51	.255	6,48
5	.688	17,48	.380	9,65
6	.453	11,51	.383	9,73
8	.312	7,93	.438	11,13

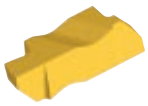
TOP NOTCH Holder Design

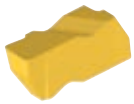
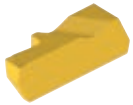
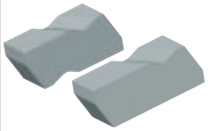


NOTE: Holders are designed to locate insert inclined to 3° to provide back clearance down open side.

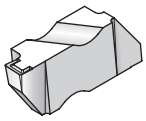
Kennametal and Top Notch tooling technology combine to bring you the very best threading and grooving system available in the world today.

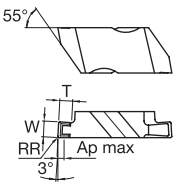
TOP NOTCH Grooving Application Guide

Insert Style	Application	Rake Angle	Page
NG-K	• chip control geometry • general purpose grooving • o-ring grooving • circlip grooving • light turning	10° positive	B12
NG 	• general purpose grooving • o-ring grooving • circlip grooving	neutral	B14
NGP	• general purpose grooving • o-ring grooving • circlip grooving	5° positive	B15
NGD-K	• chip control geometry • deep grooving • light turning	10° positive	B16
NGD	• deep grooving	neutral	B16
NR-K	• chip control geometry • full radius grooving • turning profiling	10° positive	B17
NR	• full radius grooving • turning profiling	neutral	B17
NRP	• full radius grooving • light-turning profiling	5° positive	B17
NRD	• deep grooving • full radius endform	neutral	B18

Insert Style	Application	Rake Angle	Page
NF-K	• face grooving with chip control • additional side clearance	10° positive	B19
NF 	• face grooving • additional side clearance	neutral	B19
NFD-K	• deep face grooving with chip control • additional side clearance	10° positive	B19
NFD-KI 	• internal deep face groovingwith chip control • for use in boring bars for internal face grooves	10° positive	B20
NP-K **NPD-K**	• turning • back turning • profiling with chip control	10° positive	B20
NU	• undercutting	neutral	B18
NV	• Poly Vee grooving	neutral	B18
NGC-K	• combined groove & chamfered edge break in one plunge with chip control • designed for DIN 471/472 standard circlip grooves	10° positive	B21
NB/NBD 	• blanks • blanks for deep grooving • available only in uncoated grades	- -	B22

NG-K



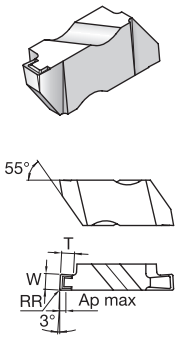


Insert size	W inch	W mm	Catalog number	Dimensions: Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P: KT315	KC5010	KC5025	KC9110	M: KT315	KC5010	KC5025	K: KC5010	KC5025	KC9110	N: KC5410	KC5025	KD1405	KD100	S: K313	K68	KC5010	KC5025	H: KD081	KD120	KENNA UNIVERSAL: KU10T	KU30T
			Right hand																												
2	.031	0,79	**NG2031RK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.032	0,80	**NG2M080RK**	.030	0,76	.0035	0,09	.050	1,27		●	●			●	●	●	●			●					●	●				
2	.039	1,00	**NG2M100RK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.047	1,19	**NG2047RK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.047	1,20	**NG2M120RK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●				
2	.055	1,40	**NG2M140RK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●				
2	.059	1,50	**NG2M150RK**	.043	1,09	.0075	0,19	.110	2,79	●		●		●		●		●			●						●			●	●
2	.062	1,58	**NG2062RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.067	1,70	**NG2M170RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.069	1,75	**NG2M175RK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.077	1,95	**NG2M195RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.079	2,00	**NG2M200RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.087	2,20	**NG2M220RK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.088	2,25	**NG2M225RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.094	2,39	**NG2094RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.098	2,50	**NG2M250RK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.108	2,75	**NG2M275RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.118	3,00	**NG2M300RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.125	3,18	**NG2125RK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.128	3,25	**NG2M325RK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
3	.039	1,00	**NG3M100RK**	.030	0,76	.0075	0,19	.075	1,91	●		●		●		●		●			●						●			●	●
3	.047	1,19	**NG3047RK**	.030	0,76	.0075	0,19	.075	1,91		●	●	●		●	●	●	●	●		●					●	●			●	●
3	.047	1,20	**NG3M120RK**	.030	0,76	.0075	0,19	.075	1,91		●	●			●	●	●	●			●					●	●				
3	.059	1,50	**NG3M150RK**	.040	1,02	.0075	0,19	.094	2,39	●		●	●	●		●		●	●		●						●			●	●
3	.062	1,58	**NG3062RK**	.040	1,02	.0075	0,19	.094	2,39	●	●	●	●	●	●	●	●	●	●		●				●	●	●			●	●
3	.069	1,75	**NG3M175RK**	.040	1,02	.0075	0,19	.094	2,39			●				●		●			●						●				
3	.072	1,83	**NG3072RK**	.040	1,02	.0075	0,19	.094	2,39		●	●			●	●	●	●			●					●	●			●	●
3	.078	1,98	**NG3078RK**	.040	1,02	.0075	0,19	.094	2,39		●	●	●		●	●	●	●	●		●					●	●			●	●
3	.079	2,00	**NG3M200RK**	.040	1,02	.0075	0,19	.094	2,39	●		●	●	●		●		●	●		●						●			●	●
3	.087	2,20	**NG3M220RK**	.040	1,02	.0075	0,19	.094	2,39			●				●		●			●						●				
3	.088	2,25	**NG3M225RK**	.040	1,02	.0075	0,19	.094	2,39	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.094	2,39	**NG3094RK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●				●	●	●			●	●
3	.098	2,50	**NG3M250RK**	.040	1,02	.0075	0,19	.150	3,81	●		●	●	●		●		●	●		●						●			●	●
3	.108	2,75	**NG3M275RK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●		●	●	●	●	●			●					●	●			●	●
3	.118	3,00	**NG3M300RK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.125	3,18	**NG3125RK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●				●	●	●			●	●
3	.126	3,20	**NG3M320RK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
3	.128	3,25	**NG3M325RK**	.040	1,02	.0075	0,19	.150	3,81	●		●		●		●		●			●						●				
3	.138	3,50	**NG3M350RK**	.115	2,92	.0125	0,32	.150	3,81	●		●		●		●		●			●						●			●	●
3	.156	3,96	**NG3156RK**	.115	2,92	.0075	0,19	.150	3,81		●	●			●	●	●	●			●					●	●			●	●
3	.158	4,00	**NG3M400RK**	.115	2,92	.0125	0,32	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.167	4,25	**NG3M425RK**	.115	2,92	.0125	0,32	.150	3,81		●	●			●	●	●	●			●					●	●				
3	.177	4,50	**NG3M450RK**	.115	2,92	.0125	0,32	.150	3,81			●				●		●			●						●				
3	.189	4,80	**NG3189RK**	.115	2,92	.0225	0,57	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.118	3,00	**NG4M300RK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
4	.125	3,18	**NG4125RK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.126	3,20	**NG4M320RK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
4	.138	3,50	**NG4M350RK**	.115	2,92	.0225	0,57	.250	6,35			●	●			●		●	●		●						●				
4	.158	4,00	**NG4M400RK**	.115	2,92	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●					●	●				
4	.177	4,50	**NG4M450RK**	.115	2,92	.0225	0,57	.250	6,35			●				●		●			●						●				
4	.189	4,80	**NG4189RK**	.115	2,92	.0225	0,57	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.197	5,00	**NG4M500RK**	.115	2,92	.0125	0,32	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●				
4	.217	5,50	**NG4M550RK**	.150	3,81	.0225	0,57	.250	6,35			●				●		●			●						●				
4	.236	6,00	**NG4M600RK**	.150	3,81	.0225	0,57	.250	6,35			●	●			●		●	●		●						●				
4	.250	6,35	**NG4250RK**	.150	3,81	.0225	0,57	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●

NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NG2031RK
Insert grade: KT315

NG-K

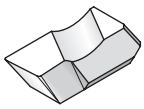
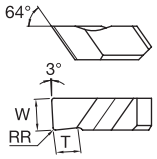
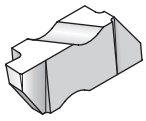
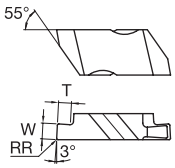
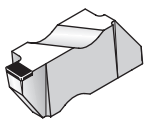


Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KENNA UNIVERSAL KU30T
			Left hand																												
2	.031	0,79	**NG2031LK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.032	0,80	**NG2M080LK**	.030	0,76	.0035	0,09	.050	1,27		●	●			●	●	●	●			●					●	●				
2	.039	1,00	**NG2M100LK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.047	1,19	**NG2047LK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.047	1,20	**NG2M120LK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●				
2	.055	1,40	**NG2M140LK**	.030	0,76	.0035	0,09	.050	1,27	●	●	●		●	●	●	●	●			●					●	●				
2	.059	1,50	**NG2M150LK**	.043	1,09	.0075	0,19	.110	2,79	●		●		●		●		●			●					●	●			●	●
2	.062	1,58	**NG2062LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.067	1,70	**NG2M170LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.069	1,75	**NG2M175LK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.077	1,95	**NG2M195LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.079	2,00	**NG2M200LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.087	2,20	**NG2M220LK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.088	2,25	**NG2M225LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.094	2,39	**NG2094LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.098	2,50	**NG2M250LK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
2	.108	2,75	**NG2M275LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●				
2	.118	3,00	**NG2M300LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.125	3,18	**NG2125LK**	.043	1,09	.0075	0,19	.110	2,79	●	●	●		●	●	●	●	●			●					●	●			●	●
2	.128	3,25	**NG2M325LK**	.043	1,09	.0075	0,19	.110	2,79			●				●		●			●						●				
3	.039	1,00	**NG3M100LK**	.030	0,76	.0075	0,19	.075	1,91	●		●		●		●		●			●						●			●	●
3	.047	1,19	**NG3047LK**	.030	0,76	.0075	0,19	.075	1,91		●	●	●		●	●	●	●	●		●					●	●			●	●
3	.047	1,20	**NG3M120LK**	.030	0,76	.0075	0,19	.075	1,91		●	●			●	●	●	●			●					●	●				
3	.059	1,50	**NG3M150LK**	.040	1,02	.0075	0,19	.094	2,39	●		●	●	●		●		●	●		●						●			●	●
3	.062	1,58	**NG3062LK**	.040	1,02	.0075	0,19	.094	2,39	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.069	1,75	**NG3M175LK**	.040	1,02	.0075	0,19	.094	2,39			●				●		●			●						●				
3	.072	1,83	**NG3072LK**	.040	1,02	.0075	0,19	.094	2,39		●	●			●	●	●	●			●					●	●			●	●
3	.078	1,98	**NG3078LK**	.040	1,02	.0075	0,19	.094	2,39		●	●	●		●	●	●	●	●		●					●	●			●	●
3	.079	2,00	**NG3M200LK**	.040	1,02	.0075	0,19	.094	2,39	●		●	●	●		●		●	●		●						●			●	●
3	.087	2,20	**NG3M220LK**	.040	1,02	.0075	0,19	.094	2,39			●				●		●			●						●				
3	.088	2,25	**NG3M225LK**	.040	1,02	.0075	0,19	.094	2,39	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.094	2,39	**NG3094LK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.098	2,50	**NG3M250LK**	.040	1,02	.0075	0,19	.150	3,81	●		●	●	●		●		●	●		●						●			●	●
3	.108	2,75	**NG3M275LK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●		●	●	●	●	●			●					●	●			●	●
3	.118	3,00	**NG3M300LK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.125	3,18	**NG3125LK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.126	3,20	**NG3M320LK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
3	.128	3,25	**NG3M325LK**	.040	1,02	.0075	0,19	.150	3,81	●		●		●		●		●			●						●				
3	.138	3,50	**NG3M350LK**	.115	2,92	.0125	0,32	.150	3,81	●		●		●		●		●			●						●			●	●
3	.156	3,96	**NG3156LK**	.115	2,92	.0075	0,19	.150	3,81		●	●			●	●	●	●			●					●	●			●	●
3	.158	4,00	**NG3M400LK**	.115	2,92	.0125	0,32	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
3	.167	4,25	**NG3M425LK**	.115	2,92	.0125	0,32	.150	3,81		●	●			●	●	●	●			●					●	●				
3	.177	4,50	**NG3M450LK**	.115	2,92	.0125	0,32	.150	3,81			●				●		●			●						●				
3	.189	4,80	**NG3189LK**	.115	2,92	.0225	0,57	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.118	3,00	**NG4M300LK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
4	.125	3,18	**NG4125LK**	.040	1,02	.0075	0,19	.150	3,81	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.126	3,20	**NG4M320LK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
4	.138	3,50	**NG4M350LK**	.115	2,92	.0225	0,57	.250	6,35			●	●			●		●	●		●						●				
4	.158	4,00	**NG4M400LK**	.115	2,92	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●					●	●				
4	.177	4,50	**NG4M450LK**	.115	2,92	.0225	0,57	.250	6,35			●				●		●			●						●				
4	.189	4,80	**NG4189LK**	.115	2,92	.0225	0,57	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●
4	.197	5,00	**NG4M500LK**	.115	2,92	.0125	0,32	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●				
4	.217	5,50	**NG4M550LK**	.150	3,81	.0225	0,57	.250	6,35			●				●		●			●						●				
4	.236	6,00	**NG4M600LK**	.150	3,81	.0225	0,57	.250	6,35			●	●			●		●	●		●						●				
4	.250	6,35	**NG4250LK**	.150	3,81	.0225	0,57	.250	6,35	●	●	●	●	●	●	●	●	●	●		●					●	●			●	●

NOTE: Right-hand insert shown; left-hand insert is mirror image.

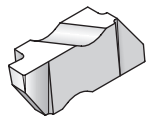
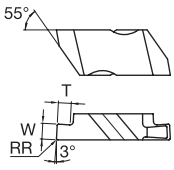
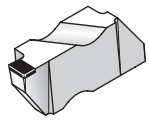
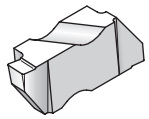
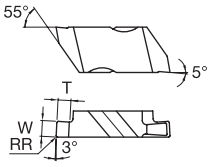
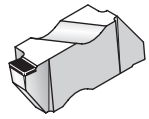
Order example:
Catalog number: NG2031LK
Insert grade: KT315

TOP NOTCH Grooving Inserts

	Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KENNA UNIVERSAL KU30T
NG-1L				**Left hand**																												
	1	.031	0,79	**NG1031L***	-	-	.0075	0,19	.050	1,27			●				●		●			●						●				
	1	.047	1,19	**NG1047L***	-	-	.0075	0,19	.075	1,91			●				●		●			●				●		●				
	1	.062	1,60	**NG1062L***	-	-	.0075	0,19	.075	1,91			●				●		●			●				●		●				
	1	.094	2,39	**NG1094L***	-	-	.0075	0,19	.075	1,91			●				●		●			●				●		●				
																																
*these inserts have one cutting edge																																
NG				**Right hand**																												
	2	.031	0,79	**NG2031R**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●			●	
	2	.041	1,04	**NG2041R**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●				
	2	.047	1,19	**NG2047R**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●			●	
	2	.058	1,47	**NG2058R**	-	-	.0075	0,19	.050	1,27		●	●			●	●	●	●			●				●	●	●				
	2	.062	1,58	**NG2062R**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●			●	●
	2	.094	2,39	**NG2094R**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●			●	
	2	.125	3,18	**NG2125R**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●				
	3	.047	1,19	**NG3047R**	-	-	.0075	0,19	.075	1,91		●	●	●		●	●	●	●	●		●			●	●	●	●			●	●
	3	.062	1,58	**NG3062R**	-	-	.0075	0,19	.094	2,39		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.072	1,83	**NG3072R**	-	-	.0075	0,19	.094	2,39		●				●		●								●	●					
	3	.078	1,98	**NG3078R**	-	-	.0075	0,19	.094	2,39		●				●		●								●	●					
	3	.088	2,24	**NG3088R**	-	-	.0075	0,19	.094	2,39		●	●			●	●	●	●			●			●	●	●	●				
	3	.094	2,39	**NG3094R**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.097	2,46	**NG3097R**	-	-	.0125	0,32	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.105	2,67	**NG3105R**	-	-	.0075	0,19	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.110	2,79	**NG3110R**	-	-	.0125	0,32	.150	3,81			●				●		●			●				●		●				
	3	.122	3,10	**NG3122R**	-	-	.0075	0,19	.150	3,81			●				●		●			●						●				
	3	.125	3,18	**NG3125R**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.142	3,61	**NG3142R**	-	-	.0125	0,32	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.156	3,96	**NG3156R**	-	-	.0075	0,19	.150	3,81		●	●			●	●	●	●			●				●	●	●		●		
	3	.178	4,52	**NG3178R**	-	-	.0075	0,19	.150	3,81			●				●		●			●						●				
	3	.185	4,70	**NG3185R**	-	-	.0225	0,57	.150	3,81			●				●		●			●						●				
	3	.189	4,80	**NG3189R**	-	-	.0225	0,57	.150	3,81		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●		●	●
	4	.125	3,18	**NG4125R**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●				●	●	●			●	●
	4	.189	4,80	**NG4189R**	-	-	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●				●	●	●		●	●	
	4	.213	5,41	**NG4213R**	-	-	.0075	0,19	.250	6,35			●				●		●			●						●				
	4	.219	5,56	**NG4219R**	-	-	.0225	0,57	.250	6,35			●				●		●			●						●				
	4	.250	6,35	**NG4250R**	-	-	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●			●	●	●	●		●	●	
	5	.197	5,00	**NG5M500R**	-	-	.0125	0,32	.375	9,52			●				●		●			●				●		●				
	5	.236	6,00	**NG5M600R**	-	-	.0125	0,32	.375	9,52			●				●		●			●				●		●				
	5	.250	6,35	**NG5250R**	-	-	.0225	0,57	.375	9,52			●				●		●			●				●		●				
	5	.281	7,14	**NG5281R**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	5	.312	7,93	**NG5312R**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	5	.375	9,53	**NG5375R**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	6	.281	7,14	**NG6281R**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
	6	.312	7,93	**NG6312R**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
	6	.375	9,53	**NG6375R**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
																																
NOTE: all KD... grades are single-ended tipped inserts																																

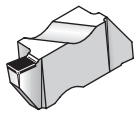
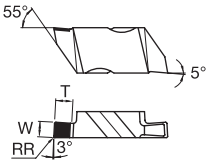
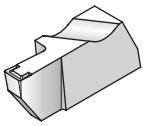
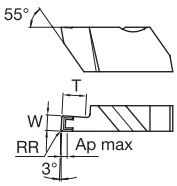
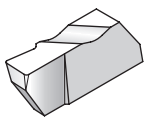
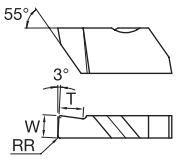
NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NG1031L
Insert grade: KC5025

	Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KENNA UNIVERSAL KU30T
NG				**Left hand**																												
	2	.031	0,79	**NG2031L**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●			●	
	2	.041	1,04	**NG2041L**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●			●	
	2	.047	1,19	**NG2047L**	-	-	.0035	0,09	.050	1,27		●	●			●	●	●	●			●				●	●	●			●	
	2	.058	1,47	**NG2058L**	-	-	.0075	0,19	.050	1,27		●	●			●	●	●	●			●				●	●	●				
	2	.062	1,58	**NG2062L**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●			●	●
	2	.094	2,39	**NG2094L**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●			●	
	2	.125	3,18	**NG2125L**	-	-	.0075	0,19	.110	2,79		●	●			●	●	●	●			●				●	●	●				
	3	.047	1,19	**NG3047L**	-	-	.0075	0,19	.075	1,91		●	●	●		●	●	●	●	●		●			●	●	●	●			●	●
	3	.062	1,58	**NG3062L**	-	-	.0075	0,19	.094	2,39		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.072	1,83	**NG3072L**	-	-	.0075	0,19	.094	2,39		●				●		●								●	●					
	3	.078	1,98	**NG3078L**	-	-	.0075	0,19	.094	2,39		●				●		●								●	●					
	3	.088	2,24	**NG3088L**	-	-	.0075	0,19	.094	2,39		●	●			●	●	●	●			●				●	●	●				
	3	.094	2,39	**NG3094L**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.097	2,46	**NG3097L**	-	-	.0125	0,32	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.105	2,67	**NG3105L**	-	-	.0075	0,19	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.110	2,79	**NG3110L**	-	-	.0125	0,32	.150	3,81			●				●		●			●				●		●				
	3	.122	3,10	**NG3122L**	-	-	.0075	0,19	.150	3,81			●				●		●			●				●		●				
	3	.125	3,18	**NG3125L**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●		●	●	●	●	●	●	●	●	●
	3	.142	3,61	**NG3142L**	-	-	.0125	0,32	.150	3,81		●	●			●	●	●	●			●				●	●	●				
	3	.156	3,96	**NG3156L**	-	-	.0075	0,19	.150	3,81		●	●			●	●	●	●			●				●	●	●	●	●		
	3	.178	4,52	**NG3178L**	-	-	.0075	0,19	.150	3,81			●				●		●			●						●				
	3	.185	4,70	**NG3185L**	-	-	.0225	0,57	.150	3,81			●				●		●			●						●				
	3	.189	4,80	**NG3189L**	-	-	.0225	0,57	.150	3,81		●	●	●		●	●	●	●	●		●			●	●	●	●		●	●	●
	4	.125	3,18	**NG4125L**	-	-	.0075	0,19	.150	3,81		●	●	●		●	●	●	●	●		●				●	●	●		●	●	●
	4	.189	4,80	**NG4189L**	-	-	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●				●	●	●		●	●	
	4	.213	5,41	**NG4213L**	-	-	.0075	0,19	.250	6,35			●				●		●			●						●				
	4	.219	5,56	**NG4219L**	-	-	.0225	0,57	.250	6,35			●				●		●			●						●				
	4	.250	6,35	**NG4250L**	-	-	.0225	0,57	.250	6,35		●	●	●		●	●	●	●	●		●			●	●	●	●			●	
	5	.197	5,00	**NG5M500L**	-	-	.0125	0,32	.375	9,52			●				●		●			●				●		●				
	5	.236	6,00	**NG5M600L**	-	-	.0125	0,32	.375	9,52			●				●		●			●				●		●				
	5	.250	6,35	**NG5250L**	-	-	.0225	0,57	.375	9,53			●				●		●			●				●		●				
	5	.281	7,14	**NG5281L**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	5	.312	7,93	**NG5312L**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	5	.375	9,53	**NG5375L**	-	-	.0325	0,83	.375	9,52			●				●		●			●				●		●				
	6	.281	7,14	**NG6281L**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
	6	.312	7,93	**NG6312L**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
	6	.375	9,53	**NG6375L**	-	-	.0325	0,83	.250	6,35			●				●		●			●						●				
NOTE: all KD... grades are single-ended tipped inserts																																
NGP				**Right hand**																												
	2	.031	0,79	**NGP2031R**	-	-	.0035	0,09	.050	1,27		●				●		●			●					●	●					
	2	.062	1,58	**NGP2062R**	-	-	.0075	0,19	.110	2,79		●				●		●			●					●	●					
	2	.125	3,18	**NGP2125R**	-	-	.0075	0,19	.110	2,79		●				●		●			●					●	●					
	3	.088	2,24	**NGP3088R**	-	-	.0075	0,19	.094	2,39		●				●		●			●			●			●					
	3	.125	3,18	**NGP3125R**	-	-	.0075	0,19	.150	3,81		●				●		●			●			●		●	●					
	3	.156	3,96	**NGP3156R**	-	-	.0075	0,19	.150	3,81		●				●		●			●			●			●					
	3	.189	4,80	**NGP3189R**	-	-	.0225	0,57	.150	3,81		●				●		●			●			●			●					
	4	.189	4,80	**NGP4189R**	-	-	.0225	0,57	.250	6,35		●				●		●			●						●					
	4	.250	6,35	**NGP4250R**	-	-	.0225	0,57	.250	6,35		●				●		●			●						●					
				Left hand																												
	2	.031	0,79	**NGP2031L**	-	-	.0035	0,09	.050	1,27		●				●		●			●					●	●					
	2	.062	1,58	**NGP2062L**	-	-	.0075	0,19	.110	2,79		●				●		●			●					●	●					
	2	.125	3,18	**NGP2125L**	-	-	.0075	0,19	.110	2,79		●				●		●			●					●	●					
	3	.088	2,24	**NGP3088L**	-	-	.0075	0,19	.094	2,39		●				●		●			●			●		●	●					
	3	.125	3,18	**NGP3125L**	-	-	.0075	0,19	.150	3,81		●				●		●			●			●		●	●					
	3	.156	3,96	**NGP3156L**	-	-	.0075	0,19	.150	3,81		●				●		●			●			●			●					
	3	.189	4,80	**NGP3189L**	-	-	.0225	0,57	.150	3,81		●				●		●			●			●			●					
	4	.189	4,80	**NGP4189L**	-	-	.0225	0,57	.250	6,35		●				●		●			●						●					
	4	.250	6,35	**NGP4250L**	-	-	.0225	0,57	.250	6,35		●				●		●			●						●					
NOTE: all KD... grades are single-ended tipped inserts																																

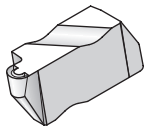
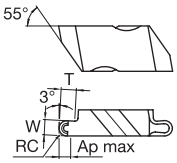
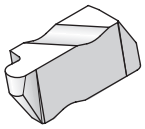
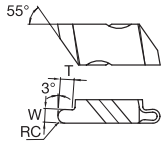
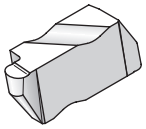
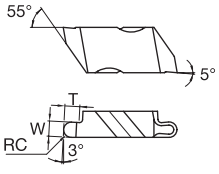
NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NG2031L
Insert grade: KC5010

	Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
NGP-E				**Right hand**																												
	3	.094	2,39	**NGP3094RE**	-	-	.0075	0,19	.150	3,81													●									
	3	.125	3,18	**NGP3125RE**	-	-	.0075	0,19	.150	3,81													●									
	3	.189	4,80	**NGP3189RE**	-	-	.0225	0,57	.150	3,81													●									
				Left hand																												
	3	.094	2,39	**NGP3094LE**	-	-	.0075	0,19	.150	3,81													●									
	3	.125	3,18	**NGP3125LE**	-	-	.0075	0,19	.150	3,81													●									
	3	.189	4,80	**NGP3189LE**	-	-	.0225	0,57	.150	3,81													●									
																																
NOTE: all KD... grades are single-ended tipped inserts																																
NGD-K				**Right hand**																												
	3	.062	1,58	**NGD3062RK**	.040	1,02	.0075	0,19	.125	3,18	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	3	.094	2,39	**NGD3094RK***	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	3	.125	3,18	**NGD3125RK***	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	3	.189	4,80	**NGD3189RK***	.115	2,92	.0225	0,57	.250	6,35	●	●	●		●	●	●	●	●			●					●	●			●	●
	4	.125	3,18	**NGD4125RK**	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●					●	●				
	4	.185	4,70	**NGD4185RK***	.115	2,92	.0225	0,57	.375	9,53			●				●		●			●						●				
	4	.189	4,80	**NGD4189RK***	.115	2,92	.0225	0,57	.375	9,53	●	●	●		●	●	●	●	●			●			●		●	●				
	4	.250	6,35	**NGD4250RK***	.150	3,81	.0225	0,57	.500	12,70	●	●	●		●	●	●	●	●			●			●		●	●				
				Left hand																												
	3	.062	1,58	**NGD3062LK**	.040	1,02	.0075	0,19	.125	3,18	●	●	●		●	●	●	●	●			●					●	●			●	●
	3	.094	2,39	**NGD3094LK***	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	3	.125	3,18	**NGD3125LK***	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	3	.189	4,80	**NGD3189LK***	.115	2,92	.0225	0,57	.250	6,35	●	●	●		●	●	●	●	●			●			●		●	●			●	●
	4	.125	3,18	**NGD4125LK**	.040	1,02	.0075	0,19	.250	6,35	●	●	●		●	●	●	●	●			●					●	●				
	4	.189	4,80	**NGD4189LK***	.115	2,92	.0225	0,57	.375	9,53	●	●	●		●	●	●	●	●			●			●		●	●				
	4	.250	6,35	**NGD4250LK***	.150	3,81	.0225	0,57	.500	12,70	●	●	●		●	●	●	●	●			●			●		●	●				
																																
* these inserts have one cutting edge																																
NGD				**Right hand**																												
	3	.189	4,80	**NGD3189R***	-	-	.0225	0,57	.250	6,35		●				●		●							●		●					
	4	.250	6,35	**NGD4250R***	-	-	.0225	0,57	.500	12,70		●				●		●							●		●					
				Left hand																												
	3	.189	4,80	**NGD3189L***	-	-	.0225	0,57	.250	6,35		●				●		●							●		●					
	4	.250	6,35	**NGD4250L***	-	-	.0225	0,57	.500	12,70		●				●		●							●		●					
																																
* these inserts have one cutting edge																																

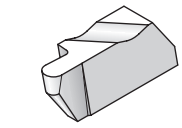
NOTE: Right-hand insert shown; left-hand insert is mirror image.

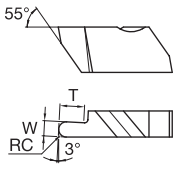
Order example:
Catalog number: NGP3094RE
Insert grade: KD1405

	Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RC inch	RC mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KENNA UNIVERSAL KU30T
NR-K				**Right hand**																												
	3	.062	1,58	**NR3031RK**	.078	1,98	.031	0,79	.094	2,39		●	●			●	●	●	●			●					●	●			●	●
	3	.094	2,39	**NR3047RK**	.075	1,91	.047	1,19	.150	3,81		●	●			●	●	●	●			●				●	●	●			●	●
	3	.156	3,96	**NR3078RK**	.100	2,54	.078	1,98	.150	3,81		●	●			●	●	●	●			●					●	●				
	3	.125	3,18	**NR3062RK**	.115	2,92	.063	1,59	.150	3,81		●	●			●	●	●	●			●					●	●			●	●
	4	.125	3,18	**NR4062RK**	.115	2,92	.063	1,59	.150	3,81		●	●			●	●	●	●			●					●	●				
	4	.188	4,78	**NR4094RK**	.150	3,81	.094	2,39	.250	6,35		●	●			●	●	●	●			●					●	●				
	4	.250	6,35	**NR4125RK**	.150	3,81	.125	3,18	.250	6,35		●	●			●	●	●	●			●				●	●	●				
				**Left hand**																												
	3	.062	1,58	**NR3031LK**	.078	1,98	.031	0,79	.094	2,39		●	●			●	●	●	●			●					●	●			●	●
	3	.094	2,39	**NR3047LK**	.075	1,91	.047	1,19	.150	3,81		●	●			●	●	●	●			●					●	●			●	●
	3	.156	3,96	**NR3078LK**	.100	2,54	.078	1,98	.150	3,81		●	●			●	●	●	●			●					●	●				
	3	.125	3,18	**NR3062LK**	.115	2,92	.063	1,59	.150	3,81		●	●			●	●	●	●			●					●	●			●	●
	4	.125	3,18	**NR4062LK**	.115	2,92	.063	1,59	.150	3,81		●	●			●	●	●	●			●					●	●				
	4	.188	4,78	**NR4094LK**	.150	3,81	.094	2,39	.250	6,35		●	●			●	●	●	●			●					●	●				
	4	.250	6,35	**NR4125LK**	.150	3,81	.125	3,18	.250	6,35		●	●			●	●	●	●			●					●	●				
NR				**Right hand**																												
	2	.062	1,58	**NR2031R**	-	-	.031	0,79	.110	2,79		●	●			●	●	●	●			●					●	●				
	2	.094	2,39	**NR2047R**	-	-	.047	1,19	.110	2,79			●				●		●			●					●	●				
	2	.125	3,18	**NR2062R**	-	-	.063	1,59	.110	2,79		●	●			●	●	●	●			●					●	●				
	3	.062	1,58	**NR3031R**	-	-	.031	0,79	.094	2,39		●				●		●							●	●	●			●	●
	3	.094	2,39	**NR3047R**	-	-	.047	1,19	.150	3,81		●				●		●							●	●	●			●	●
	3	.125	3,18	**NR3062R**	-	-	.063	1,59	.150	3,81		●				●		●							●	●	●			●	●
	3	.156	3,96	**NR3078R**	-	-	.078	1,98	.150	3,81															●	●						
	3	.188	4,78	**NR3094R**	-	-	.094	2,39	.150	3,81		●	●			●	●	●	●			●			●		●	●				
	4	.125	3,18	**NR4062R**	-	-	.063	1,59	.150	3,81																●						
	4	.188	4,78	**NR4094R**	-	-	.094	2,39	.250	6,35															●	●						
	4	.250	6,35	**NR4125R**	-	-	.125	3,18	.250	6,35		●				●		●							●	●	●					
				**Left hand**																												
	2	.062	1,58	**NR2031L**	-	-	.031	0,79	.110	2,79		●	●			●	●	●	●			●					●	●				
	2	.094	2,39	**NR2047L**	-	-	.047	1,19	.110	2,79			●				●		●			●					●	●				
	2	.125	3,18	**NR2062L**	-	-	.063	1,59	.110	2,79		●	●			●	●	●	●			●					●	●				
	3	.062	1,58	**NR3031L**	-	-	.031	0,79	.094	2,39		●				●		●							●	●	●			●	●
	3	.094	2,39	**NR3047L**	-	-	.047	1,19	.150	3,81		●				●		●							●	●	●			●	●
	3	.125	3,18	**NR3062L**	-	-	.063	1,59	.150	3,81		●				●		●							●	●	●			●	●
	3	.156	3,96	**NR3078L**	-	-	.078	1,98	.150	3,81																●						
	3	.188	4,78	**NR3094L**	-	-	.094	2,39	.150	3,81		●	●			●	●	●	●			●			●		●	●				
	4	.125	3,18	**NR4062L**	-	-	.063	1,59	.150	3,81																●						
	4	.188	4,78	**NR4094L**	-	-	.094	2,39	.250	6,35																●						
	4	.250	6,35	**NR4125L**	-	-	.125	3,18	.250	6,35		●				●		●								●	●					
NRP				**Right hand**																												
	3	.062	1,58	**NRP3031R**	-	-	.031	0,79	.094	2,39		●				●		●			●					●	●				
	3	.094	2,39	**NRP3047R**	-	-	.047	1,19	.150	3,81		●				●		●			●					●	●				
	3	.125	3,18	**NRP3062R**	-	-	.063	1,59	.150	3,81		●				●		●			●					●	●				
	3	.156	3,96	**NRP3078R**	-	-	.078	1,98	.150	3,81											●											
	3	.188	4,78	**NRP3094R**	-	-	.094	2,39	.150	3,81		●				●		●			●						●					
	4	.125	3,18	**NRP4062R**	-	-	.063	1,59	.150	3,81											●											
	4	.188	4,78	**NRP4094R**	-	-	.094	2,39	.250	6,35											●											
	4	.250	6,35	**NRP4125R**	-	-	.125	3,18	.250	6,35											●											
				**Left hand**																												
	3	.062	1,58	**NRP3031L**	-	-	.031	0,79	.094	2,39		●				●		●			●					●	●				
	3	.094	2,39	**NRP3047L**	-	-	.047	1,19	.150	3,81		●				●		●			●					●	●				
	3	.125	3,18	**NRP3062L**	-	-	.063	1,59	.150	3,81		●				●		●			●					●	●				
	3	.156	3,96	**NRP3078L**	-	-	.078	1,98	.150	3,81											●											
	3	.188	4,78	**NRP3094L**	-	-	.094	2,39	.150	3,81		●				●		●			●						●					
	4	.125	3,18	**NRP4062L**	-	-	.063	1,59	.150	3,81											●											
	4	.188	4,78	**NRP4094L**	-	-	.094	2,39	.250	6,35											●											
	4	.250	6,35	**NRP4125L**	-	-	.125	3,18	.250	6,35											●											

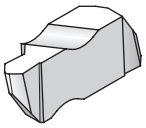
NOTE: Right-hand insert shown; left-hand insert is mirror image.

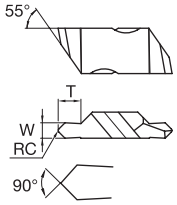
Order example:
Catalog number: **NR3047RK**
Insert grade: **KC5010**

	Insert size	W inch	W mm	Catalog number	Dimensions Ap max inch	Ap max mm	RC inch	RC mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
NRD				**Right hand**																												
	3	.062	1,58	**NRD3031R**	-	-	.031	0,79	.125	3,18	●	●	●		●	●	●	●	●			●				●	●	●				
	3	.125	3,18	**NRD3062R***	-	-	.063	1,59	.250	6,35	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.125	3,18	**NRD4062R**	-	-	.063	1,59	.250	6,35	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.188	4,78	**NRD4094R***	-	-	.094	2,39	.500	12,70	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.250	6,35	**NRD4125R***	-	-	.125	3,18	.500	12,70	●	●	●		●	●	●	●	●			●					●	●				
				Left hand																												
55°	3	.062	1,58	**NRD3031L**	-	-	.031	0,79	.125	3,18	●	●	●		●	●	●	●	●			●				●	●	●				
	3	.125	3,18	**NRD3062L***	-	-	.063	1,59	.250	6,35	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.125	3,18	**NRD4062L**	-	-	.063	1,59	.250	6,35	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.188	4,78	**NRD4094L***	-	-	.094	2,39	.500	12,70	●	●	●		●	●	●	●	●			●				●	●	●				
	4	.250	6,35	**NRD4125L***	-	-	.125	3,18	.500	12,70	●	●	●		●	●	●	●	●			●					●	●				

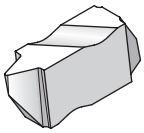


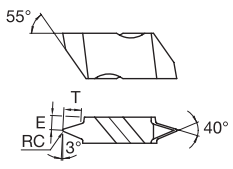
* these inserts have one cutting edge

NU				**Right hand**																												
	3	.094	2,39	**NU3094R**	-	-	.020	0,51	.125	3,18			●				●		●			●				●		●				
	3	.125	3,18	**NU3125R**	-	-	.047	1,19	.188	4,78			●				●		●			●						●				
	3	.156	3,96	**NU3156R**	-	-	.047	1,19	.188	4,78			●				●		●			●						●				
				Left hand																												
	3	.094	2,39	**NU3094L**	-	-	.020	0,51	.125	3,18			●				●		●			●				●		●				
	3	.125	3,18	**NU3125L**	-	-	.047	1,19	.188	4,78			●				●		●			●				●		●				
	3	.156	3,96	**NU3156L**	-	-	.047	1,19	.188	4,78			●				●		●			●						●				



tolerance on W:
± .005 inch (± 0,13 mm)

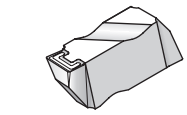
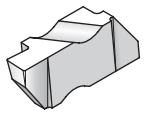
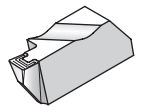
NV				**Right hand**																												
	3	-	-	**NV3RJ**	-	-	.013	0,32	.087	2,21			●				●		●			●				●		●				
	4	-	-	**NV4RL**	-	-	.013	0,32	.201	5,11			●				●		●			●				●		●				
				Right hand																												
	3	-	-	**NV3LJ**	-	-	.013	0,32	.087	2,21			●				●		●			●				●		●				
	4	-	-	**NV4LL**	-	-	.013	0,32	.201	5,11			●				●		●			●						●				

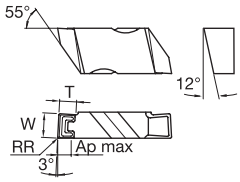


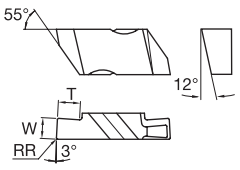
for size 3: E = .125 inch (3,18 mm)
for size 4: E = .118 inch (3,00 mm)

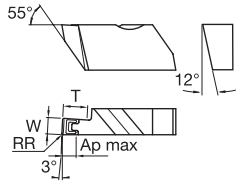
NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NRD3031R
Insert grade: KT315

	Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
NF-K				**Right hand**																												
	3	.125	3,18	**NF3125RK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
	3	.156	3,96	**NF3156RK**	.115	2,92	.0075	0,19	.150	3,81			●				●		●			●						●				
				Left hand																												
	3	.125	3,18	**NF3125LK**	.040	1,02	.0075	0,19	.150	3,81			●				●		●			●						●				
	3	.156	3,96	**NF3156LK**	.115	2,92	.0075	0,19	.150	3,81			●				●		●			●						●				
NF				**Right hand**																												
	3	.125	3,18	**NF3125R**	-	-	.0075	0,19	.150	3,81															●							
	3	.188	4,78	**NF3188R**	-	-	.0225	0,57	.150	3,81			●				●		●			●						●				
				Left hand																												
	3	.125	3,18	**NF3125L**	-	-	.0075	0,19	.150	3,81															●							
	3	.188	4,78	**NF3188L**	-	-	.0225	0,57	.150	3,81			●				●		●			●			●			●				
NFD-K				**Right hand**																												
	3	.125	3,18	**NFD3125RK***	.040	1,02	.0075	0,19	.250	6,35			●				●		●			●						●				
	4	.189	4,80	**NFD4189RK***	.115	2,92	.0225	0,57	.375	9,53			●				●		●			●						●				
	4	.250	6,35	**NFD4250RK***	.150	3,81	.0225	0,57	.500	12,70			●				●		●			●						●				
				Left hand																												
	3	.125	3,18	**NFD3125LK***	.040	1,02	.0075	0,19	.250	6,35			●				●		●			●						●				
	4	.189	4,80	**NFD4189LK***	.115	2,92	.0225	0,57	.375	9,53			●				●		●			●						●				
	4	.250	6,35	**NFD4250LK***	.150	3,81	.0225	0,57	.500	12,70			●				●		●			●						●				





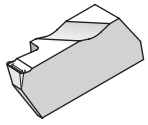


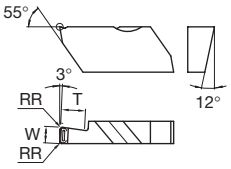
* these inserts have one cutting edge

NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NF3125RK
Insert grade: KC5025

NFD-KI

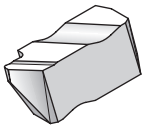


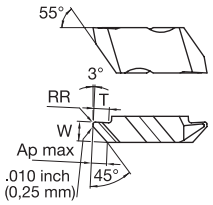


* these inserts have one cutting edge

Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
Right hand																															
3	.125	3,18	**NFD3125RKI***	.040	1,02	.0075	0,19	.250	6,35			●				●		●			●						●				
3	.189	4,80	**NFD3189RKI***	.115	2,92	.0225	0,57	.250	6,35			●				●		●			●						●				
Left hand																															
3	.125	3,18	**NFD3125LKI***	.040	1,02	.0075	0,19	.250	6,35			●				●		●			●						●				
3	.189	4,80	**NFD3189LKI***	.115	2,92	.0225	0,57	.250	6,35			●				●		●			●						●				

NP-K

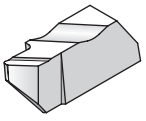


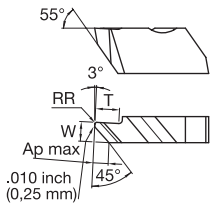


tolerance on W:
± .005 inch (± 0,13 mm)

Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
Right hand																															
2	.145	3,68	**NP2012RK**	.108	2,74	.0135	0,34	.110	2,79			●				●		●			●						●				
2	.145	3,68	**NP2002RK**	.108	2,74	.0035	0,09	.110	2,79		●	●			●	●	●	●			●					●	●				
3	.190	4,83	**NP3012RK**	.151	3,83	.0135	0,34	.200	5,08			●				●		●			●						●				
3	.190	4,83	**NP3002RK**	.151	3,83	.0035	0,09	.200	5,08		●	●			●	●	●	●			●					●	●				

NPD-K





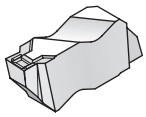
tolerance on W:
± .005 inch (± 0,13 mm)

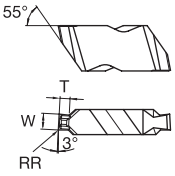
Insert size	W inch	W mm	Catalog number	Ap max inch	Ap max mm	RR inch	RR mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KU30T
Right hand																															
2	.145	3,68	**NPD2012RK**	.108	2,74	.0135	0,34	.200	5,08		●				●		●										●				
2	.145	3,68	**NPD2002RK**	.108	2,74	.0035	0,09	.200	5,08		●	●			●	●	●	●			●						●	●			
3	.190	4,83	**NPD3012RK**	.151	3,83	.0135	0,34	.250	6,35		●	●			●	●	●	●			●						●	●			
3	.190	4,83	**NPD3002RK**	.151	3,83	.0035	0,09	.250	6,35			●				●		●			●						●				

NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: NFD3125RKI
Insert grade: KC5025

NGC-K



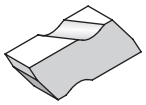
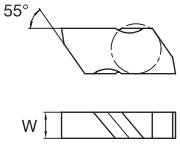
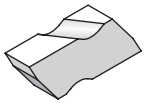
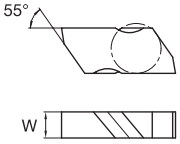


NOTE:
groove and chamfer inserts for circlip grooves to DIN 471/472 specification

Insert size	Circlip size inch	Circlip size mm	Catalog number	Dimensions W inch	Dimensions W mm	Dimensions RR inch	Dimensions RR mm	Dimensions T inch	Dimensions T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	K KC9110	N KC5410	N KC5025	N KD1405	N KD100	S K313	S K68	S KC5010	S KC5025	H KD081	H KD120	KENNA UNIVERSAL KU10T	KENNA UNIVERSAL KU30T
			Right hand																												
2	.043	1,10	**NGC2C110R030K**	.047	1,19	.0031	0,08	.012	0,30			●				●		●			●						●				
2	.043	1,10	**NGC2C110R035K**	.047	1,19	.0031	0,08	.014	0,35			●				●		●			●						●				
2	.043	1,10	**NGC2C110R040K**	.047	1,19	.0031	0,08	.016	0,40			●				●		●			●						●				
2	.051	1,30	**NGC2C130R055K**	.055	1,39	.0031	0,08	.022	0,55			●				●		●			●						●				
2	.063	1,60	**NGC2C160R070K**	.067	1,69	.0031	0,08	.028	0,70			●				●		●			●						●				
2	.063	1,60	**NGC2C160R085K**	.067	1,69	.0031	0,08	.034	0,85			●				●		●			●						●				
2	.063	1,60	**NGC2C160R100K**	.067	1,69	.0031	0,08	.039	1,00			●				●		●			●						●				
2	.073	1,85	**NGC2C185R100K**	.067	1,69	.0031	0,08	.039	1,00			●				●		●			●						●				
2	.073	1,85	**NGC2C185R125K**	.076	1,94	.0031	0,08	.049	1,25			●				●		●			●						●				
2	.085	2,15	**NGC2C215R150K**	.088	2,24	.0031	0,08	.059	1,50			●				●		●			●						●				
2	.104	2,65	**NGC2C265R150K**	.088	2,24	.0031	0,08	.059	1,50			●				●		●			●						●				
2	.104	2,65	**NGC2C265R175K**	.108	2,74	.0031	0,08	.069	1,75			●				●		●			●						●				
2	.124	3,15	**NGC2C315R175K**	.129	3,27	.0031	0,08	.069	1,75			●				●		●			●						●				
3	.163	4,15	**NGC3C415R200K**	.169	4,30	.0031	0,08	.079	2,00			●				●		●			●						●				
3	.163	4,15	**NGC3C415R250K**	.169	4,30	.0031	0,08	.098	2,50			●				●		●			●						●				
			Left hand																												
2	.043	1,10	**NGC2C110L030K**	.047	1,19	.0031	0,08	.012	0,30			●				●		●			●						●				
2	.043	1,10	**NGC2C110L035K**	.047	1,19	.0031	0,08	.014	0,35			●				●		●			●						●				
2	.043	1,10	**NGC2C110L040K**	.047	1,19	.0031	0,08	.016	0,40			●				●		●			●						●				
2	.051	1,30	**NGC2C130L055K**	.055	1,39	.0031	0,08	.022	0,55			●				●		●			●						●				
2	.063	1,60	**NGC2C160L070K**	.067	1,69	.0031	0,08	.028	0,70			●				●		●			●						●				
2	.063	1,60	**NGC2C160L085K**	.067	1,69	.0031	0,08	.034	0,85			●				●		●			●						●				
2	.063	1,60	**NGC2C160L100K**	.067	1,69	.0031	0,08	.039	1,00			●				●		●			●						●				
2	.073	1,85	**NGC2C185L100K**	.067	1,69	.0031	0,08	.039	1,00			●				●		●			●						●				
2	.073	1,85	**NGC2C185L125K**	.076	1,94	.0031	0,08	.049	1,25			●				●		●			●						●				
2	.085	2,15	**NGC2C215L150K**	.088	2,24	.0031	0,08	.059	1,50			●				●		●			●						●				
2	.104	2,65	**NGC2C265L150K**	.088	2,24	.0031	0,08	.059	1,50			●				●		●			●						●				
2	.104	2,65	**NGC2C265L175K**	.108	2,74	.0031	0,08	.069	1,75			●				●		●			●						●				
2	.124	3,15	**NGC2C315L175K**	.129	3,27	.0031	0,08	.069	1,75			●				●		●			●						●				
3	.163	4,15	**NGC3C415L200K**	.169	4,30	.0031	0,08	.079	2,00			●				●		●			●						●				
3	.163	4,15	**NGC3C415L250K**	.169	4,30	.0031	0,08	.098	2,50			●				●		●			●						●				

NOTE: Right-hand insert shown; left-hand insert is mirror image.

Order example:
Catalog number: **NGC2C110R030K**
Insert grade: **KC5025**

	Insert size	W inch	W mm	Catalog number	K68	K313	K420
NB				**Right hand**			
	2	.150	3,81	**NB2R**	●	●	●
	3	.195	4,95	**NB3R**	●	●	●
	4	.255	6,48	**NB4R**	●	●	●
	5	.380	9,65	**NB5R**	●		●
	6	.383	9,73	**NB6R**	●		
				Left hand			
	2	.150	3,81	**NB2L**	●	●	●
	3	.195	4,95	**NB3L**	●	●	●
	4	.255	6,48	**NB4L**	●	●	●
	5	.380	9,65	**NB5L**	●		●
	6	.383	9,73	**NB6L**	●		
NBD				**Right hand**			
	2	.150	3,81	**NBD2R**		●	
	3	.195	4,95	**NBD3R**		●	
				Left hand			
	3	.195	4,95	**NBD3L**		●	

NOTE:
NB and NBD blanks are designed to allow modification of the W-dimension and end form. W-dimension is provided to indicate maximum possible width. Available only in uncoated grades.

NOTE: Right-hand insert shown; left-hand insert is mirror image.

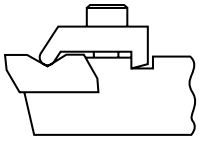
Order example:
Catalog number: NB2R
Insert grade: K68

METRIC

INCH

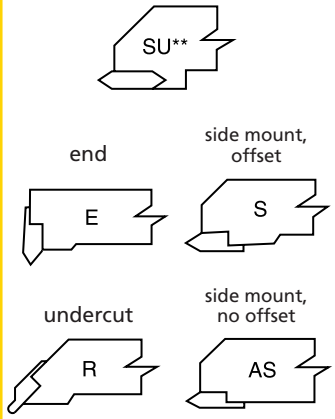
1. Insert Holding Method	2. Insert Mounting Location	3. Hand of Tool	4. Drop Head	5. Shank Size	6. Insert Size	7. Qualified Surface and Length
N	S	R		2525M 16	4	D

1. Insert Holding Method

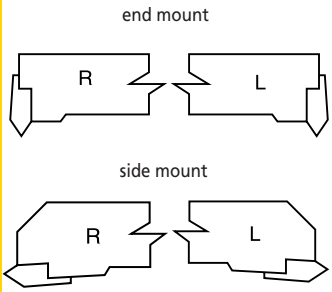


N – TOP NOTCH*

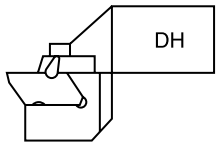
2. Insert Mounting Location



3. Hand of Tool



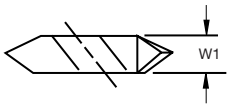
4. Drop Head



5. Shank Size

metric:
Shank height and width in mm and holder length according to ISO standard.
inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and larger, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width and the second digit the number of quarters of height, except for a toolholder 1 1/4" x 1 1/2", which is given the number 91.

6. Insert Size



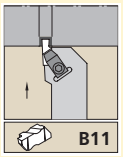
insert size	W1 inch	W1 mm
2	.150	3,81
3	.195	4,95
4	.255	6,98
5	.380	9,65
6	.383	9,73
8	.438	11,13

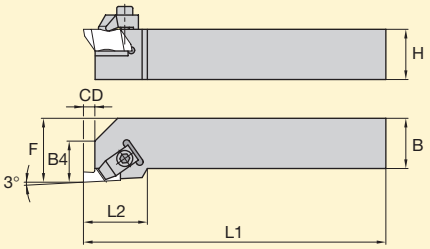
7. Qualified Surface and Length

A – qualified back and end, 4" long
B – qualified back and end, 4.5" long
C – qualified back and end, 5" long
D – qualified back and end, 6" long
E – qualified back and end, 7" long
V – qualified back and end, 3.5" long*
Q – qualified metric holder

* Kennametal proprietary standard only.
**Side mount utility holder can only use NTU inserts.

NS

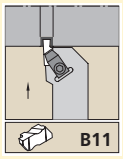


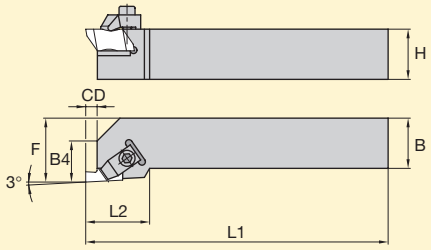


Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2R	**NSR062**	.375	.375	.562	2.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR082V**	.500	.500	.750	3.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR102B**	.625	.625	.875	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR122B**	.750	.750	1.000	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	
N.2R	**NSR162C**	1.000	1.000	1.250	5.00	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NSR123A**	.750	.750	1.000	4.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR123B**	.750	.750	1.000	4.50	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR163C**	1.000	1.000	1.250	5.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR163D**	1.000	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR853D**	1.250	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR203D**	1.250	1.250	1.500	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR243D**	1.500	1.500	2.000	6.00	1.38	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR243E**	1.500	1.500	2.000	7.00	1.38	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.5R	**NSR205D**	1.250	1.250	1.500	6.00	2.00	.61	.415	-	-	-	-	-	**CM80**	**S352**	1/4	-	-
N.5R	**NSR245D**	1.500	1.500	2.000	6.00	2.00	.61	.415	-	-	-	-	-	**CM80**	**S352**	1/4	-	-
	Left hand																	
N.2L	**NSL062**	.375	.375	.562	2.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL082V**	.500	.500	.750	3.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL102B**	.625	.625	.875	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL122B**	.750	.750	1.000	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL162C**	1.000	1.000	1.250	5.00	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NSL123A**	.750	.750	1.000	4.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL123B**	.750	.750	1.000	4.50	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL163C**	1.000	1.000	1.250	5.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL163D**	1.000	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL853D**	1.250	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL203D**	1.250	1.250	1.500	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL243D**	1.500	1.500	2.000	6.00	1.38	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL243E**	1.500	1.500	2.000	7.00	1.38	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.5L	**NSL205D**	1.250	1.250	1.500	6.00	2.00	.61	.415	-	-	-	-	-	**CM81**	**S352**	1/4	-	-

Order example:
NSR062

NS (with shim)

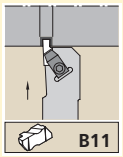


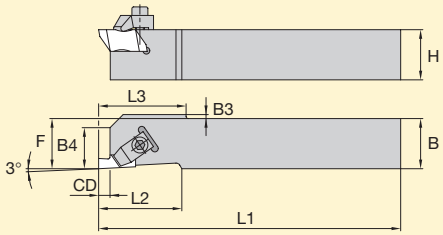


Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.4R	**NSR164C**	1.000	1.000	1.250	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR164D**	1.000	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR854D**	1.250	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR864E**	1.500	1.000	1.250	7.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR204C**	1.250	1.250	1.500	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR204D**	1.250	1.250	1.500	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR244D**	1.500	1.500	2.000	6.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR244E**	1.500	1.500	2.000	7.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.6R	**NSR166D**	1.000	1.000	1.250	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	-
N.6R	**NSR206D**	1.250	1.250	1.500	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	
N.6R	**NSR246D**	1.500	1.500	2.000	6.00	1.50	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	-
N.8R	**NSR168D**	1.000	1.000	1.250	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
N.8R	**NSR208D**	1.250	1.250	1.500	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
N.8R	**NSR248D**	1.500	1.500	2.000	6.00	1.38	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
	Left hand																	
N.4L	**NSL164C**	1.000	1.000	1.250	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL164D**	1.000	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL854D**	1.250	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL864E**	1.500	1.000	1.250	7.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL204C**	1.250	1.250	1.500	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL204D**	1.250	1.250	1.500	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL244D**	1.500	1.500	2.000	6.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL244E**	1.500	1.500	2.000	7.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.6L	**NSL166D**	1.000	1.000	1.250	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.6L	**NSL206D**	1.250	1.250	1.500	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.6L	**NSL246D**	1.500	1.500	2.000	6.00	1.50	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.8L	**NSL168D**	1.000	1.000	1.250	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM145**	**S422**	3/16	-	-

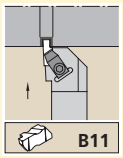
Order example:
NSR164C

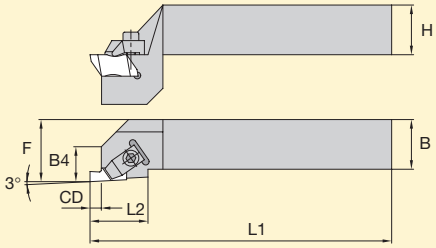
NAS





NS-DH

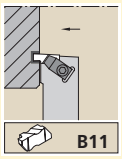


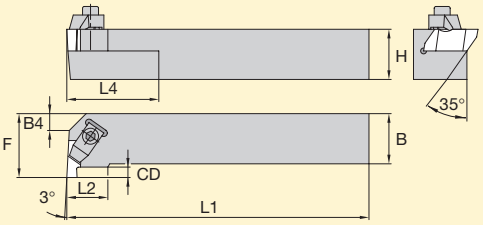


Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2R	**NASR062D**	.375	.375	.375	6.00	.75	.35	.138	.070	.88	-	-	-	**CM182**	**S310**	7/64	-	-
N.2R	**NASR082D**	.500	.500	.500	6.00	.75	.35	.138	-	-	-	-	-	**CM182**	**S310**	7/64	-	-
N.2R	**NASR102B**	.625	.625	.625	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NASR083D**	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	-	-	-	**CM184LP**	**S2112**	25 IP	-	-
N.3R	**NASR103B**	.625	.625	.625	4.50	1.25	.50	.210	-	-	-	-	-	**CM184LP**	**S2112**	25 IP	-	-
	Left hand																	
N.2L	**NASL062D**	.375	.375	.375	6.00	.75	.35	.138	.070	.88	-	-	-	**CM183**	**S310**	7/64	-	-
N.2L	**NASL082D**	.500	.500	.500	6.00	.75	.35	.138	-	-	-	-	-	**CM183**	**S310**	7/64	-	-
N.2L	**NASL102B**	.625	.625	.625	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NASL083D**	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	-	-	-	**CM185LP**	**S2112**	25 IP	-	-
N.3L	**NASL103B**	.625	.625	.625	4.50	1.25	.50	.210	-	-	-	-	-	**CM185LP**	**S2112**	25 IP	-	-
	Right hand																	
N.2R	**NSRDH122B**	.750	.750	1.000	4.50	.75	.40	.138	-	-	-	-	-	**CM74**	**S310**	7/64	**S1020**	1/8
N.2R	**NSRDH162C**	1.000	1.000	1.250	5.00	.75	.40	.138	-	-	-	-	-	**CM74**	**S310**	7/64	**S1020**	1/8
N.3R	**NSRDH123A**	.750	.750	1.250	4.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH163C**	1.000	1.000	1.250	5.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH163D**	1.000	1.000	1.250	6.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH203D**	1.250	1.250	1.500	6.00	1.25	.62	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	**S965**	3/16
N.4R	**NSRDH204D**	1.250	1.250	1.500	6.00	1.38	.62	.294	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	**S965**	3/16
	Left hand																	
N.3L	**NSLDH203D**	1.250	1.250	1.500	6.00	1.25	.62	.210	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	**S965**	3/16

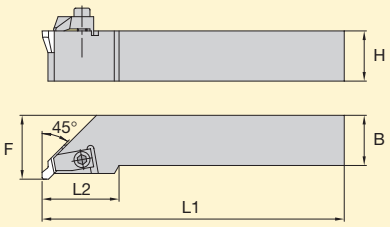
Order example:
NASR062D

NE





NR



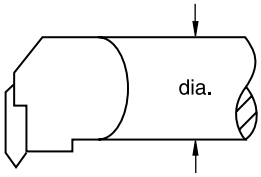
Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L4	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2L	**NER062**	.375	.375	.750	2.50	.50	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER082V**	.500	.500	.750	3.50	.50	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER102B**	.625	.625	.750	4.50	-	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER122B**	.750	.750	1.000	4.50	.50	.29	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER162C**	1.000	1.000	1.250	5.00	.50	.41	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NER123B**	.750	.750	1.125	4.50	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER163C**	1.000	1.000	1.250	5.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER163D**	1.000	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER853D**	1.250	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER203D**	1.250	1.250	1.500	6.00	.75	.26	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER243D**	1.500	1.500	2.000	6.00	.75	.76	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER164C**	1.000	1.000	1.375	5.00	.75	-	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER164D**	1.000	1.000	1.375	6.00	.75	-	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER204D**	1.250	1.250	1.625	6.00	.75	.27	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER244D**	1.500	1.500	2.000	6.00	.75	.65	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.5L	**NER205D**	1.250	1.250	2.000	6.00	1.44	-	.415	-	2.0	-	-	-	**CM81**	**S352**	1/4	-	-
N.6L	**NER206D**	1.250	1.250	1.625	6.00	.75	.27	.300	-	2.0	-	-	-	**CM121**	**S412**	5/32	-	-
N.6L	**NER246D**	1.500	1.500	2.000	6.00	.75	.50	.300	-	2.0	-	-	-	**CM121**	**S412**	5/32	-	-
	Left hand																	
N.2R	**NEL062**	.375	.375	.750	2.50	.50	-	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL082V**	.500	.500	.750	3.50	.50	-	.138	-	1.0	-	-	-	**-CM74**	**S310**	7/64	-	-
N.2R	**NEL102B**	.625	.625	.750	4.50	-	-	.138	-	1.0	-	-	-	**-CM74**	**S310**	7/64	-	-
N.2R	**NEL122B**	.750	.750	1.000	4.50	.50	.29	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL162C**	1.000	1.000	1.250	5.00	.50	.41	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NEL123B**	.750	.750	1.125	4.50	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL163C**	1.000	1.000	1.250	5.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL163D**	1.000	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL853D**	1.250	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL203D**	1.250	1.250	1.500	6.00	.75	.26	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL243D**	1.500	1.500	2.000	6.00	.75	.76	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL164C**	1.000	1.000	1.375	5.00	.75	-	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL164D**	1.000	1.000	1.375	6.00	.75	-	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL204D**	1.250	1.250	1.625	6.00	.75	.27	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL244D**	1.500	1.500	2.000	6.00	.75	.65	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.5R	**NEL205D**	1.250	1.250	2.000	6.00	1.44	-	.415	-	2.0	-	-	-	**CM80**	**S352**	1/4	-	-
N.6R	**NEL206D**	1.250	1.250	1.625	6.00	.75	.27	.300	-	2.0	-	-	-	**CM120**	**S412**	5/32	-	-
	Right hand																	
NU3125L	**NRR123B**	.750	.750	1.000	4.50	1.25	-	-	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
NU3125L	**NRR163C**	1.000	1.000	1.250	5.00	1.25	-	-	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
NU3125L	**NRR163D**	1.000	1.000	1.250	6.00	1.25	-	-	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
NU3125L	**NRR203D**	1.250	1.250	1.500	6.00	1.25	-	-	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
NU3125L	**NRR243D**	1.500	1.500	2.000	6.00	1.38	-	-	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
	Left hand																	
NU3125R	**NRL123B**	.750	.750	1.000	4.50	1.25	-	-	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
NU3125R	**NRL163C**	1.000	1.000	1.250	5.00	1.25	-	-	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
NU3125R	**NRL163D**	1.000	1.000	1.250	6.00	1.25	-	-	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
NU3125R	**NRL203D**	1.250	1.250	1.500	6.00	1.25	-	-	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-

Order example:
NER062

1. Bar Type	2. Bar Diameter	3. Insert Holding Method	4. Insert Location	5. Hand of Bar	6. Insert Size	7. Additional Information
S	32	N	E	R	3	W

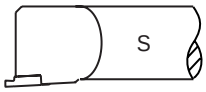
2. Bar Diameter

A two-digit number that indicates the bar diameter in 1/16-inch increments.



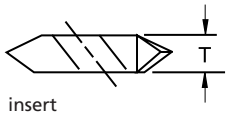
4. Insert Location

end mount



straight mount

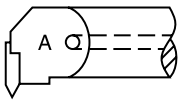
6. Insert Size



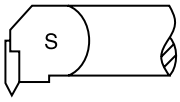
insert number	T
1	.100
2	.150
3	.195
4	.255
5	.380
6	.383
8	.438

1. Bar Type

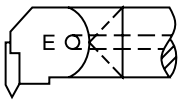
steel with coolant



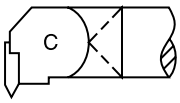
steel without coolant



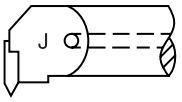
carbide with coolant



carbide without coolant

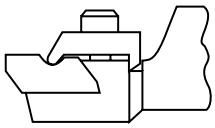


heavy metal with coolant



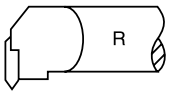
interchangeable head

3. Insert Holding Method

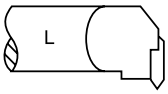


N* – TOP NOTCH

5. Hand of Bar



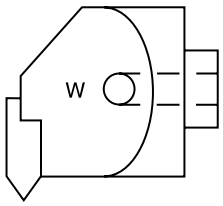
right hand



left hand

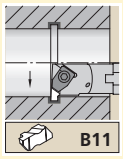
7. Additional Information

through-coolant interchangeable head

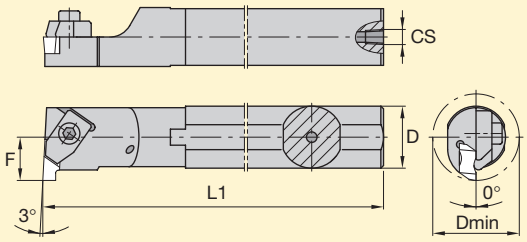


*Kennametal standard only.

A-NE



Steel shank with through coolant

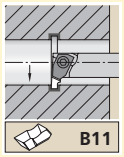


Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**A08NER2**	.730	.500	8	.437	-	1/16-27 NPT	**CM147**	**S39**	7/64
N.2L	**A10NER2**	1.000	.625	10	.500	-	1/8-27 NPT	**CM75**	**S310**	7/64
N.2L	**A12NER2**	1.125	.750	10	.562	-	1/8-27 NPT	**CM75**	**S310**	7/64
N.2L	**A16NER2**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM75**	**S310**	7/64
N.3L	**A16NER3**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A20NER3**	1.750	1.250	14	.875	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A24NER3**	2.000	1.500	14	1.000	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A28NER3**	2.250	1.750	14	1.125	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A32NER3**	2.500	2.000	16	1.250	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A40NER3**	3.000	2.500	16	1.500	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A28NER4**	2.500	1.750	14	1.250	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A32NER4**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A36NER4**	3.000	2.250	16	1.500	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A40NER4**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.5L	**A32NER5**	2.812	2.000	16	1.406	-	1/4-18 NPT	**CM81**	**S352**	1/4
N.5L	**A40NER5**	3.312	2.500	16	1.656	-	1/4-18 NPT	**CM81**	**S352**	1/4
N.6L	**A32NER6**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM121**	**S412**	5/32
N.6L	**A40NER6**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM121**	**S412**	5/32
	Left hand									
N.2R	**A08NEL2**	.730	.500	8	.437	-	1/16-27 NPT	**CM146**	**S39**	7/64
N.2R	**A10NEL2**	1.000	.625	10	.500	-	1/8-27 NPT	**CM74**	**S310**	7/64
N.2R	**A12NEL2**	1.125	.750	10	.562	-	1/8-27 NPT	**CM74**	**S310**	7/64
N.2R	**A16NEL2**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM74**	**S310**	7/64
N.3R	**A16NEL3**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A20NEL3**	1.750	1.250	14	.875	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A24NEL3**	2.000	1.500	14	1.000	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A28NEL3**	2.250	1.750	14	1.125	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A32NEL3**	2.500	2.000	16	1.250	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A40NEL3**	3.000	2.500	16	1.500	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A28NEL4**	2.500	1.750	14	1.250	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A32NEL4**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A36NEL4**	3.000	2.250	16	1.500	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A40NEL4**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.5R	**A32NEL5**	2.812	2.000	16	1.406	-	1/4-18 NPT	**CM80**	**S352**	1/4
N.5R	**A40NEL5**	3.312	2.500	16	1.656	-	1/4-18 NPT	**CM80**	**S352**	1/4
N.6R	**A32NEL6**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM120**	**S412**	5/32
N.6R	**A40NEL6**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM120**	**S412**	5/32

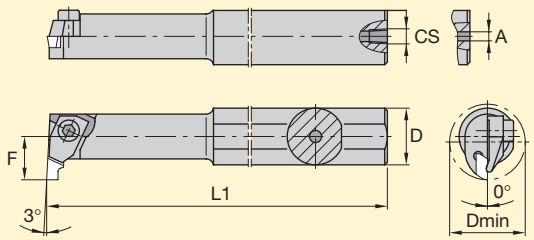
*Minimum bore capability varies with depth of groove. See page B34 for details.

Order example:
A08NER2

A-NE -1

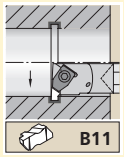


Necked steel shank
with through coolant

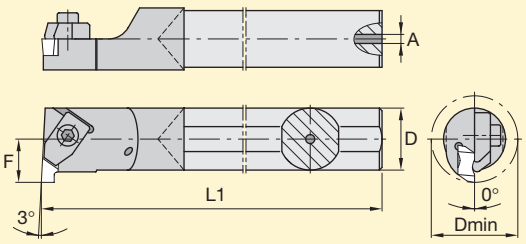


Gage Insert	Catalog number	Dmin*	D	D2	L1	L2	F	A	CS	Clamp	Clamp Screw	Hex (inch)
N.1L	**A06NER1**	.440	.375	.312	6	1.25	.258	.13	-	**CM109**	**S304**	5/64
N.1L	**A08NER1**	.440	.500	.312	8	1.25	.258	-	1/16-27 NPT	**CM109**	**S304**	5/64
N.1L	**A10NER1**	.800	.625	-	10	1.25	.406	-	1/8-27 NPT	**CM109**	**S304**	5/64

E-NE



Carbide shank with
through coolant

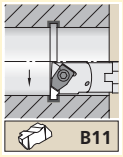


Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**E08NER2**	.730	.500	8	.437	0.19	-	**CM147**	**S39**	7/64
N.2L	**E10NER2**	1.000	.625	10	.500	0.22	-	**CM75**	**S310**	7/64
N.2L	**E12NER2**	1.125	.750	10	.562	0.28	-	**CM75**	**S310**	7/64
N.3L	**E16NER3**	1.375	1.000	12	.688	0.31	-	**CM73LP**	**S2112**	25 IP
	Left hand									
N.2R	**E08NEL2**	.730	.500	8	.437	0.19	-	**CM146**	**S39**	7/64
N.2R	**E10NEL2**	1.000	.625	10	.500	0.22	-	**CM74**	**S310**	7/64
N.2R	**E12NEL2**	1.125	.750	10	.562	0.28	-	**CM74**	**S310**	7/64
N.3R	**E16NEL3**	1.375	1.000	12	.688	0.31	-	**CM72LP**	**S2112**	25 IP

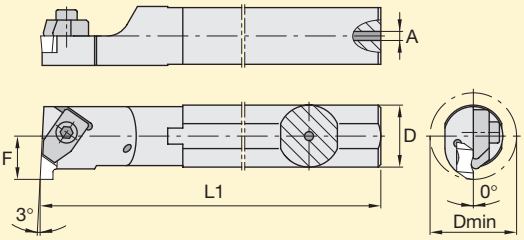
*Minimum bore capability varies with depth of groove. See page B34 for details.

Order example:
A06NER1

J-NE

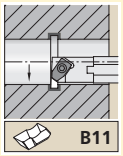


Heavy metal shank
with through coolant

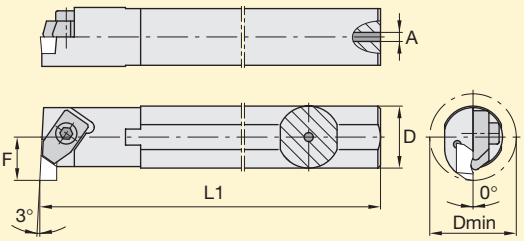


Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**J08NER2**	.730	.500	8	.437	.16	-	**CM147**	**S39**	7/64
N.2L	**J10NER2**	1.000	.625	8	.500	.16	-	**CM75**	**S310**	7/64
N.2L	**J12NER2**	1.125	.750	8	.562	.16	-	**CM75**	**S310**	7/64
N.2L	**J16NER2**	1.375	1.000	10	.688	.25	-	**CM75**	**S310**	7/64
N.3L	**J16NER3**	1.375	1.000	10	.688	.25	-	**CM73LP**	**S2112**	25 IP
	Left hand									
N.2R	**J08NEL2**	.730	.500	8	.437	.16	-	**CM146**	**S39**	7/64
N.2R	**J10NEL2**	1.000	.625	8	.500	.16	-	**CM74**	**S310**	7/64
N.2R	**J12NEL2**	1.125	.750	8	.562	.16	-	**CM74**	**S310**	7/64
N.2R	**J16NEL2**	1.375	1.000	10	.688	.25	-	**CM74**	**S310**	7/64
N.3R	**J16NEL3**	1.375	1.000	10	.688	.25	-	**CM72LP**	**S2112**	25 IP

J-NE-S



Heavy metal shank
with through coolant

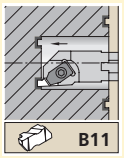


Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)
	Right hand									
N.1L	**J05NER1S**	.440	.313	6	.258	.09	-	**CM109**	**S304**	5/64
N.1L	**J06NER1S**	.480	.375	6	.265	.13	-	**CM109**	**S304**	5/64
N.1L	**J08NER1S**	.600	.500	8	.325	.16	-	**CM109**	**S304**	5/64

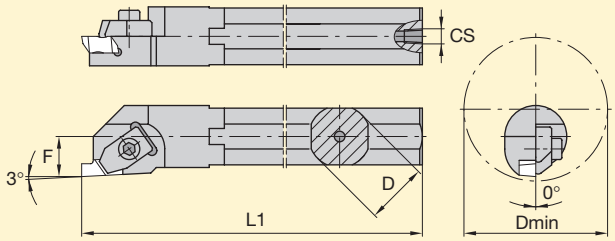
*Minimum bore capability varies with depth of groove. See page B34 for details.

Order example:
J08NER2

A-NS



Steel shank with
through coolant

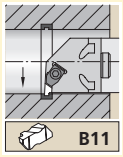


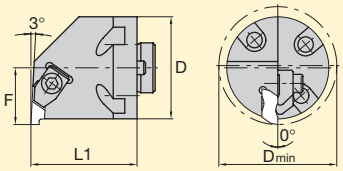
Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Torx Plus
	Right hand									
N.3R	**A16NSR3**	2.250	1.000	12	.640	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A20NSR3**	2.250	1.250	14	.765	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A24NSR3**	2.250	1.500	14	.890	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A28NSR3**	2.250	1.750	14	1.015	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A32NSR3**	2.375	2.000	16	1.281	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A40NSR3**	2.875	2.500	16	1.531	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
	Left hand									
N.3L	**A16NSL3**	2.250	1.000	12	.640	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A20NSL3**	2.250	1.250	14	.765	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A24NSL3**	2.250	1.750	14	1.015	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A28NSL3**	2.250	1.500	14	.890	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A32NSL3**	2.375	2.000	16	1.281	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A40NSL3**	2.875	2.500	16	1.531	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP

*Minimum bore applicable only when used with NFD-KI inserts on internal face grooves. See page B35 for machining guidelines when face grooving.

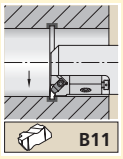
Order example:
A16NSR3

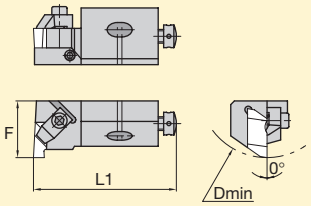
H-NE





NE





Gage Insert	Catalog number	D	D min*	F	L1	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Torx Plus/ Hex (inch)
	Right hand										
N.3L	**H20NER3W**	1.250	1.750	.875	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H24NER3W**	1.500	2.000	1.000	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H28NER3W**	1.750	2.250	1.125	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H32NER3W**	2.000	2.500	1.250	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H40NER3W**	2.500	3.000	1.500	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H28NER4W**	1.750	2.500	1.250	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H32NER4W**	2.000	2.750	1.375	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H36NER4W**	2.250	3.000	1.500	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H40NER4W**	2.500	3.250	1.625	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.6L	**H28NER6W**	1.750	2.500	1.250	1.625	-	-	-	**CM121**	**S412**	5/32
N.6L	**H32NER6W**	2.000	2.750	1.375	1.625	-	-	-	**CM121**	**S412**	5/32
N.6L	**H40NER6W**	2.500	3.250	1.625	1.625	-	-	-	**CM121**	**S412**	5/32
N.8L	**H20NER8W**	1.250	1.750	.875	1.625	-	-	-	**CM145**	**S422**	3/16
N.8L	**H24NER8W**	1.500	2.000	1.000	1.625	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
N.8L	**H32NER8W**	2.000	2.500	1.250	1.625	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
	Left hand										
N.3R	**H20NEL3W**	1.250	1.750	.875	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H24NEL3W**	1.500	2.000	1.000	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H28NEL3W**	1.750	2.250	1.125	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H32NEL3W**	2.000	2.500	1.250	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H40NEL3W**	2.500	3.000	1.500	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H28NEL4W**	1.750	2.500	1.250	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H32NEL4W**	2.000	2.750	1.375	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H36NEL4W**	2.250	3.000	1.500	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H40NEL4W**	2.500	3.250	1.625	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.6R	**H28NEL6W**	1.750	2.500	1.250	1.625	-	-	-	**CM120**	**S412**	5/32
N.6R	**H32NEL6W**	2.000	2.750	1.375	1.625	-	-	-	**CM120**	**S412**	5/32
N.6R	**H40NEL6W**	2.500	3.250	1.625	1.625	-	-	-	**CM120**	**S412**	5/32
N.8R	**H20NEL8W**	1.250	1.750	.875	1.625	-	-	-	**CM144**	**S422**	3/16
N.8R	**H24NEL8W**	1.500	2.000	1.000	1.625	**SM427**	**S111**	1/16	**CM144**	**S422**	3/16
N.8R	**H32NEL8W**	2.000	2.500	1.250	1.625	**SM427**	**S111**	1/16	**CM144**	**S422**	3/16

NOTE: For boring adapters, see page A236 - A238.

Gage Insert	Catalog number	Dmin*	F	L1	Clamp	Clamp Screw	Hex (inch/ mm)	Radial Adj. Screw	Hex (inch/ mm)	Axial. Adj. Screw	Hold-Down-Screw	Hex (inch/ mm)
	Right hand											
N.2L	**NER12CA2C**	1.969	.787	2.17	**CM75**	**CS1025**	3/32	**KUAC23**	3/32	**KUAM31**	**S624**	3/16
N.2L	**NER20CA2A**	2.756	.984	2.76	**CM75**	**MS1025**	2.5	**KUAM25**	2.5	**KUAM33**	**MS353**	6
N.2L	**NER20CA2C**	2.756	.984	2.76	**CM75**	**CS1025**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
N.3L	**NER25CA3C**	3.937	1.260	3.94	**CM73**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16
N.4L	**NER25CA4C**	3.937	1.260	3.94	**CM73C**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16
	Left hand											
N.2R	**NEL12CA2C**	1.969	.787	2.17	**CM74**	**CS1025**	3/32	**KUAC23**	3/32	**KUAM31**	**S624**	3/16
N.2R	**NEL20CA2C**	2.756	.984	2.76	**CM74**	**CS1025**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
N.3R	**NEL25CA3C**	3.937	1.260	3.94	**CM72**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16

*Minimum bore capability varies with depth of groove. See page B34 for details.

Order example:
H20NER3W

Machining Guidelines for Chip Control – Grooving

- Center height of insert should be positioned at the center of the workpiece, or up to .005 inch (0,13 mm) above.
- Dwell time in the bottom of the groove, more than three revolutions, is not recommended.
- Chip control is feed rate related, and should be adjusted to fit the particular situation. Recommended feed range is .003-0.012 ipr (0,08-0,3 mm/rev).

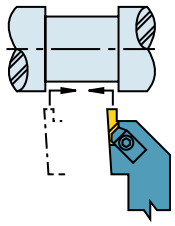
Machining Guidelines for Chip Control – Turning/Profiling

- Maximum depth of cut for side cutting (turning/profiling) depends upon material being cut and width of the tool. However, some general guidelines are:

1) .031 - .062 inch (0,79-1,6 mm) wide insert can cut up to .025 inch (0,6 mm) deep.
2) .067 - .128 inch (1,7-3,3 mm) wide insert can cut up to .040 inch (1,0 mm) deep.
3) .138 - .189 inch (3,5-4,8 mm) wide insert can cut up to .080 inch (2,0 mm) deep.
4) .197-.375 inch (5,0-9,5 mm) wide insert can cut up to .120 inch (3,0 mm) deep.

Finish turning the groove

1. Plunge both sides of groove width.
2. Plunge center area to remove web of material remaining.
3. To avoid insert chipping and to achieve groove wall perpendicularity, follow the tool path outlined here.
4. Use the lightest depth of cut that still allows good chip breaking, tool life, and surface finish.

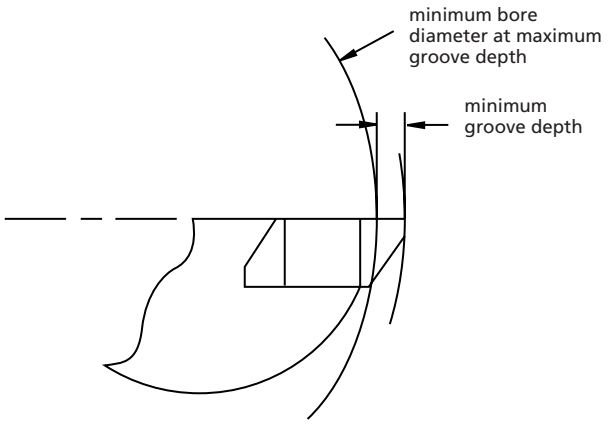


Groove Limits (Maximum Internal Groove Depth Versus Minimum Bore Diameter)

insert	maximum groove depth		minimum bore diameter	
	inch	mm	inch	mm
NG-1094L	.075	1,91	.800	20,32
	.040	1,02	.440	11,18
NG-2031R/L NG-2041R/L NG-2047R/L NG-2058R/L	.050	1,27	.730	18,54
	.110	2,79	2.500	63,5
NG-2062R/L	.102	2,59	1.750	44,45
NG-2094R/L	.098	2,49	1.500	38,10
NG-2125R/L	.080	2,03	1.000	25,40
	.055	1,40	.730	18,54
NG-3047R/L NG-3062R/L NG-3072R/L NG-3078R/L NG-3088R/L	.094 .090 .075	2,39 2,29 1,91	1.750 1.625 1.375	44,45 41,28 34,93
NG-3094R/L NG-3097R/L NG-3105R/L NG-3110R/L NG-3122R/L NG-3125R/L NG-3142R/L NG-3156R/L NG-3178R/L NG-3185R/L NG-3189R/L	.150 .145 .138 .125 .110	3,81 3,68 3,51 3,18 2,79	2.375 2.125 1.875 1.625 1.375	60,33 53,98 47,63 41,28 34,93
NG-4125R/L	.150	3,81	2.750	69,85
	.250	6,35	5.750	146,05
NG-4189R/L	.245	6,22	5.000	127,00
NG-4213R/L	.240	6,10	4.500	114,30
NG-4219R/L	.218	5,54	3.250	82,55
NG-4250R/L	.200	5,08	2.500	63,50

insert	maximum groove depth		minimum bore diameter	
	inch	mm	inch	mm
	.375	9,53	28.812	731,82
NG-5250R/L	.361	9,17	15.812	401,62
NG-5281R/L	.344	8,74	10.812	274,62
NG-5312R/L	.327	8,31	7.312	185,72
NG-5344R/L	.294	7,47	4.812	122,22
NG-5375R/L	.257	6,53	3.562	90,47
	.215	5,46	2.812	71,42
NG-6250R/L	.250	6,35	5.750	146,05
NG-6281R/L	.245	6,22	5.000	127,00
NG-6312R/L	.240	6,10	4.500	114,30
NG-6344R/L	.218	5,54	3.250	82,55
NG-6375R/L	.200	5,08	2.500	63,50

Internal Groove Depth Versus Bar Interference



NOTE: Internal grooving depth limits are a function of bar clearance versus bore diameters.

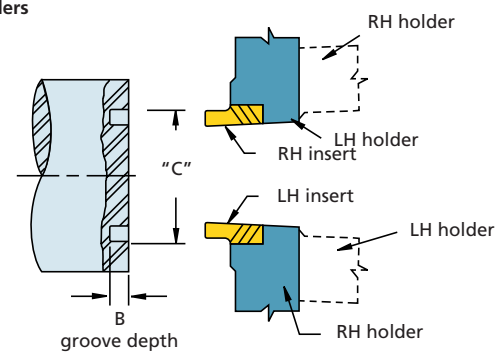
*The same maximum groove depth and minimum bore diameter values also apply to metric, NG-K (chip control), and NR (full radius) inserts of similar size.

Machining Guidelines for Face Grooving Operations – External

Standard NF/NFD Inserts

insert family	maximum groove depth "B"		minimum groove diameter "C"	
	inch	mm	inch	mm
NF-3	.060	1,52	.94	23,9
NF-3	.094	2,39	1.20	30,5
NF-3	.125	3,18	1.42	36,1
NF-3	.150	3,81	1.63	41,3
NFD-3	.250	6,35	1.88	47,6
NF-4/6	.060	1,52	.94	23,9
NF-4/6	.094	2,39	1.20	30,5
NF-4/6	.125	3,18	1.42	36,1
NF-4/6	.150	3,81	1.63	41,3
NF-4/6	.188	4,78	1.88	47,6
NF-4/6	.250	6,35	2.25	57,2
NFD-4	.375	9,53	2.25	57,2
NFD-4	.500	12,70	2.25	57,2

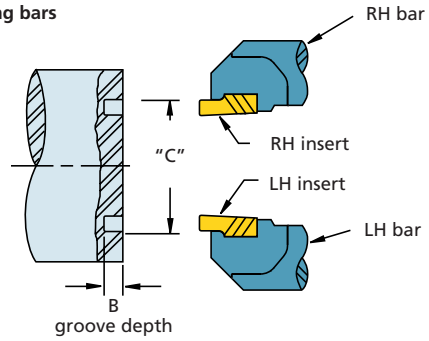
toolholders



Standard NG/NGD Inserts

insert family	maximum groove depth "B"		minimum groove diameter "C"	
	inch	mm	inch	mm
NG-2	.050	1,27	2.13	54,0
NG-2	.110	2,79	3.50	88,9
NG-3	.094	2,39	4.00	101,6
NG-3	.125	3,18	5.00	127,0
NG-3	.150	3,81	5.50	139,7
NGD-3	.250	6,35	6.88	174,6
NG-4	.150	3,81	6.00	152,4
NG-4	.250	6,35	8.25	209,6
NGD-4	.375	9,53	8.75	222,3
NGD-4	.500	12,70	8.75	222,3
NG-5	.375	9,53	13.00	330,2

boring bars

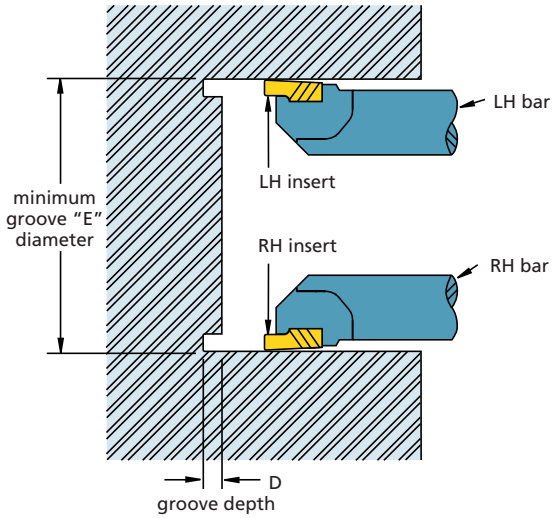


Machining Guidelines for Face Grooving Operations – Internal

insert family	maximum groove depth "D"		minimum groove diameter "E"	
	inch	mm	inch	mm
NFD-3-KI	.250	6,35	2.25	57,2

Also check minimum bore diameter of boring bar. See page B32.

boring bars



NOTE: For internal applications, use only NFD-KI inserts.

Engineering Your Competitive Edge®

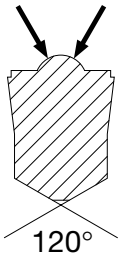
KENNAMETAL®

A4 Groove & Turn ...

... a precise and productive solution to increase productivity!

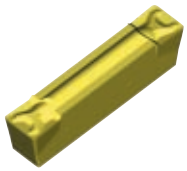
A4 Groove & Turn System

- One tool for turning, facing, grooving, face-grooving, and cut-off... in OD and ID applications – that means exceptionally fast cycle times, no turret indexes!
- Extra-long clamping area, ground 120° bottom prism seating surface, and an exclusive top guide rail combine to deliver unsurpassed grooving and side-turning stability!
- Precise insert positioning is ensured – for accurate cuts!

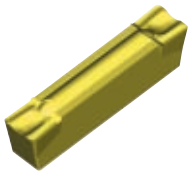


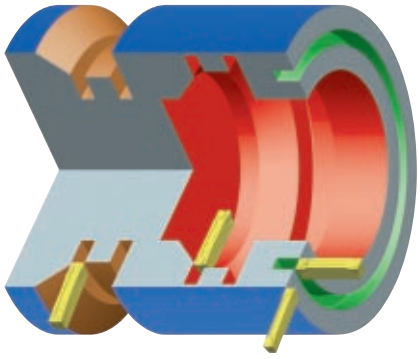
Guide ramp

Chipbreaker – GMN



Chipbreaker – GMP





The A4 system increases your productivity:

- Covers multiple applications.
- Reduces tool cost.
- Minimizes machining time.

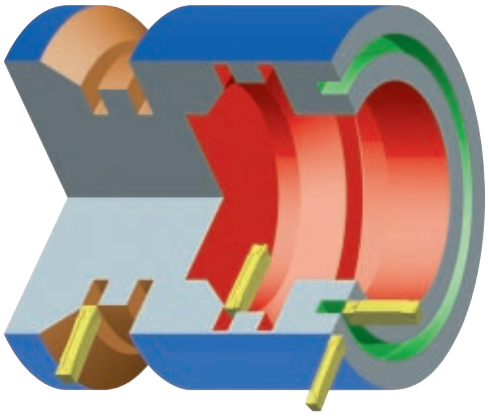
KENNA PERFECT – A4 Groove & Turn

5 Easy Steps to Greater Productivity in Grooving and Turning

What you need to know:

- Groove depth, width, and profile
- Material being machined
- Application to be performed (OD, ID face grooving, or turning)

1st Step – Choose the A4 Size for Your Grooving and Turning Application

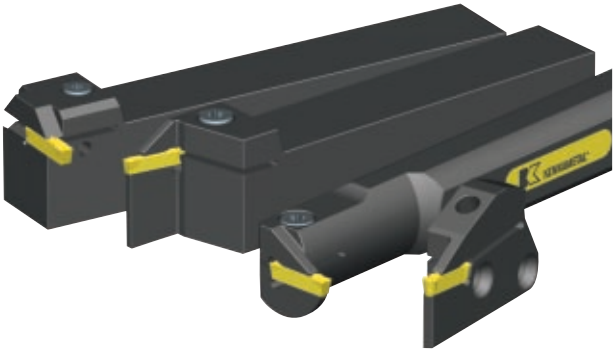


General Recommendation to Select the Insert Size

for workpiece diameters...	insert seat size
up to 1 inch	3
from 1 to 2 inches	4
>2 inches	5 - 10

EXAMPLE: For a 1.5 inch diameter part with a .125 inch minimum groove width, select insert seat size 3 (size 3 is required to cut the .125 inch groove).

2nd Step – Choose Your Toolholder Based on the Application



Note: Insert seat size must match the seat size of the toolholder.

	Conventional Toolholders	Modular Blades
OD Grooving and Turning	B49	B53
Face Grooving	B50	B54
ID Grooving and Turning	B51	–

3rd Step – Select Chipbreaker Style and Feed Rate

Choose Chipbreaker Based on Material Type.

Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
GMN	GMP	GMN	GMP precision ground (-E for KD1405)	GMP precision ground	GMN *

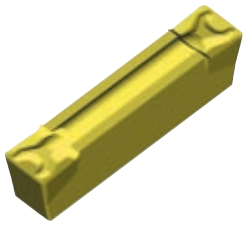
*Alternative PCBN tipped inserts in KB5625 are available upon request.

NOTE: Precision ground A4.-P-GMN inserts can be applied on all material groups for inch-width grooving.

Depth of Cut and Feed Guidelines for Square Inserts (A4G...):

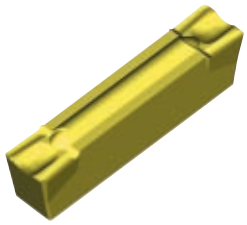
GMN Chipbreaker

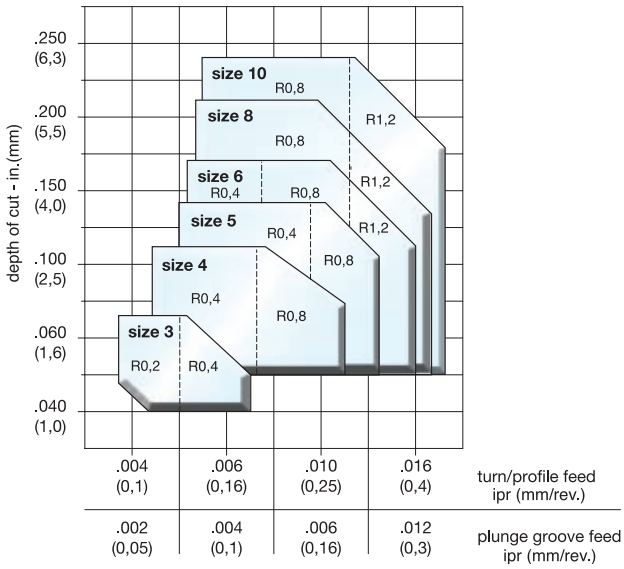
- Groove & turn molded inserts
- Stable cutting edge
- Available in metric and inch widths

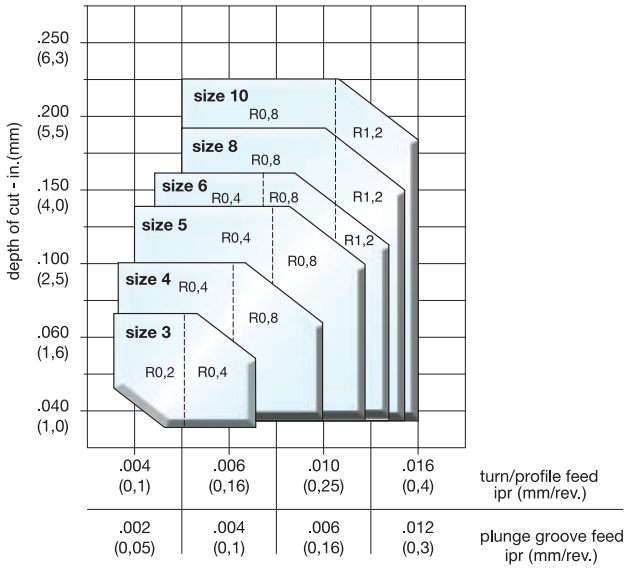


GMP Chipbreaker

- Groove & turn inserts
- Available in molded and precision-ground styles
- Positive rake angle
- Available in metric widths only







NOTE: Select feed based on nose radius. Diagram explanation: R0,2 - R = corner radius; 0,2 = 0,2 mm radius; see page B42 for further references

Depth of Cut and Feed Guidelines for Full Radius Inserts (A4R...):

GMN Chipbreaker

Maximum turning and profiling depth of cut equals 1/2 insert width.

The maximum turn and profile feed rate depends on the material to be machined and the depth of cut. For easy-to-machine materials, feed can be increased up to 1.5 times.

GMP Chipbreaker

KENNA PERFECT – A4 Groove & Turn

5 Easy Steps to Greater Productivity in Grooving and Turning

4th Step – Select Grade and Speed

Recommended KENNA PERFECT Grades

Cutting Conditions	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
heavily interrupted cut	KC5025	KC5025	KC9125	KC5025	KC5025	–
lightly interrupted cut	KC9125/KC5025	KC5025	KC9125	KC5025	KC5025	–
varying depth of cut, casting or forging skin	KC9110	KC5010	KC9110	KC5010/KD1405	K313/KC5010	KC5010*
smooth cut, pre-turned surface	KT315**/KC9110	KT315**	KC9110	KC5010/KD1405	K313/KC5010	KC5010*

*NOTE: PCBN-tipped inserts in KB5625 are available on request

Recommended KENNA UNIVERSAL Grades

Cutting Conditions	Grades
heavily interrupted cut	KU30T
lightly interrupted cut	KU30T
varying depth of cut, casting or forging skin	KU30T
smooth cut, pre-turned surface	KU30T

Recommended KENNA PERFECT Cutting Speeds

Steel

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 200 (60)	400 (120)	600 (185)	800 (245)	1000 (300)	Starting Conditions sfm	m/min
P	KC5025		◁▷				400	120
	KC9125			◁▷			650	200
	KC9110				◁▷		800	250
	KT315**				◁▷		850	260

**NOTE: KT315 is an alternative choice for steel; primarily available in the GMP chipbreaker.

Stainless Steel

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 150 (45)	300 (90)	450 (140)	600 (185)	750 (230)	Starting Conditions sfm	m/min
M	KC5025		◁▷				350	105
	KC5010			◁▷			450	135
	KT315			◁▷			550	170

Cast Iron

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 400 (120)	550 (170)	700 (215)	850 (260)	1000 (300)	Starting Conditions sfm	m/min
K	KC9125			◁▷			650	200
	KC9110		◁▷				800	245

Non-Ferrous Metals

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 500 (150)	1000 (300)	1500 (460)	2000 (610)	2500 (760)	Starting Conditions sfm	m/min
N	KC5025		◁▷				1200	365
	KC5010			◁▷			1500	455
	KD1405***				◁▷		2000	610

***Recommended for high-silicon aluminum alloys and abrasive non-metallics.

High-Temp Alloys

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 60 (15) / 120 (35) / 180 (55) / 240 (75) / 300 (90) / 450 (140)	Starting Conditions sfm	Starting Conditions m/min
S	KT315		100	30
	KC5025		150	45
	KC5010		200	60

Hardened Materials

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 60 (15) / 120 (35) / 180 (55) / 240 (75)	Starting Conditions sfm	Starting Conditions m/min
H	KC5010		100	30

Recommended KENNA UNIVERSAL Cutting Speeds

KENNA UNIVERSAL Material Group	grade	Speed - sfm (m/min) 150 (45) / 300 (90) / 450 (140) / 600 (185) / 750 (230)	Starting Conditions sfm	Starting Conditions m/min
P	KU30T		400	120
K	KU30T		650	200
M	KU30T		350	105
S	KU30T		200	60

5th Step – Select Insert and Holder from Catalog Page

NOTE: The insert seat size must match the seat size of your toolholder selection.

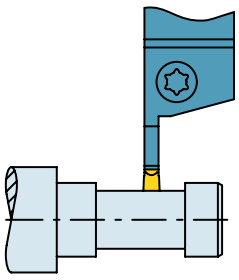
Example for A4 – Groove and Turn

material: low-alloyed steel
workpiece OD: 1.5 in. (38 mm)
groove depth: .5 in. (12 mm)
groove width: .850 in. (22 mm)
lightly interrupted cut

Recommendation:

insert: A4G0405M04U08GMN
grade: KC9125
insert width: 4,05 mm
insert seat size: 4

toolholder: A4SMR160417
grooving depth: .670 in. (17 mm)
seat size: 4



speed: 650 sfm (200 m/min)
turn feed: .010 ipr (0,25 mm)
plunge feed: .006 ipr (0,14 mm)

Congratulations!

You have successfully maximized your productivity by selecting the best A4 insert geometry, grade, and cutting specifications for your application!

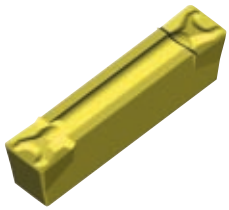
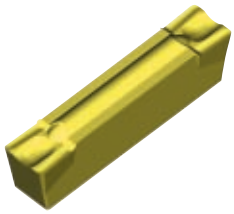
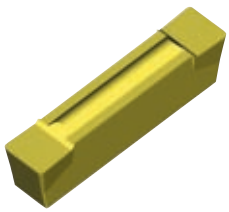
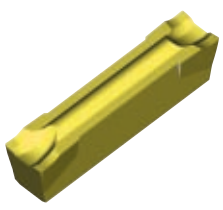
A4 Insert Identification System

Groove and Turn Inserts

1. Tooling System	2. Insert Type	3. Groove Width	4. Unit of Measurement for Grooving Width	5. Seat Size	6. Insert Tolerance	7. Corner Radius	8. Chipbreaker Type/ Edge Prep
A4	G	0405	M	04	U	02	GMN
A4 – Groove & Turn	G – square R – full radius C – cut-off	Expressed in 1/100 mm or .001 in.	M – metric N – inch	Pocket Seat Size / Cutting Width (mm) 03 / 3,0 – 3,05 04 / 4,0 – 4,05 05 / 5,0 – 5,05 06 / 6,0 – 6,05 08 / 8,0 – 8,05 10 / 10,0 – 10,05	P = precision ground grooving width tolerance: ±.001 in. (0,025 mm) U = utility molded grooving width tolerance: 3,05-4,05: +.006 -0 in. (+0,15 -0 mm) 5,05-10,05: +.010 -0 in. (+0,25 -0 mm)	metric / inch 01 = 0,1 / 0 = .004 02 = 0,2 / 05 = .008 04 = 0,4 / 1 = .016 08 = 0,8 / 2 = .032 12 = 1,2 / 3 = .047 full radius = 00	GMN = groove & turn medium machining stable cutting edge GMP = groove & turn medium machining positive rake angle B = flat top for special forms and applications E = flat top, slight honed edge

Cut-Off Inserts

1. Tooling System	2. Insert Type	3. Cutting Width	4. Hand of Insert	5. Main Cutting Edge Lead Angle	6. Chipbreaker Type	7. Corner Radius
A4	C	0305	N	00	CF	02
A4 – Groove & Turn	C – cut-off	expressed in 1/100 mm	R = right hand L = left hand N = neutral	00 = neutral 06 = 6° 10 = 10°	CF cut-off fine positive rake	metric / inch 02 = 0,2 / .008

Insert Type & Chipbreaker Designation		Application Range	Metric Widths (mm)	Inch Widths (in.)	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
molded: **A4G-U-GMN**		**Groove & Turn:** • stable cutting edge for higher feed rates • utility molded	3,05-10,05	–	●		●			●
precision ground: **A4G-P-GMN**		• stable, precision ground cutting edge • general grooving for specific inch widths • +/- .001 in. (0,025 mm) width tolerance	–	.125-.375	●	○	●	○	○	●
molded: **A4G-U-GMP**		**Groove & Turn:** • positive rake angle • reduced cutting force • small to medium feed rates • utility molded	3,05-10,05	–	○	●				
precision ground: **A4G-P-GMP**		• positive rake angle • precision ground cutting edge • +/- .001 in. (0,025 mm) width tolerance	3,0-10,00	–		○		●	●	
molded: **A4R-U-GMN**		**Groove & Turn:** • stable cutting edge for higher feed rates • utility molded	3,05-10,05	–	●		●			●
precision ground: **A4R-P-GMN**		• stable, precision ground cutting edge • general grooving for specific inch widths • +/- .001 in. (0,025 mm) width tolerance	–	.125-.375	●	○	●	○	○	●
precision ground: **A4R-P-GMP**		**Groove & Turn:** • positive rake angle • precision ground cutting edge • +/- .001 in. (0,025 mm) width tolerance	3,0-10,00	–		●		●	●	
molded: **A4G-U-B**		**Groove & Turn:** • for special profiles and for PCBN-tipped inserts (on request only) • secondary choice for cast iron and high-temp alloys	3,05-10,05	–			○		○	
precision ground: **A4G-P-E**		• diamond sheet-tipped tool for high performance non-ferrous machining	3,0-5,0	–				●		
molded: **A4C-CF**		**Cut-Off:** • high positive rake angle • sharp cutting edge • available in neutral lead angle, in 6° and 10° right- and left-hand styles	3,05-4,05	–	●	●	●	●	●	

● - primary application ○ - secondary application

A4 Groove & Turn Inserts

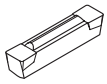
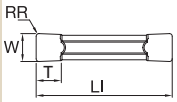
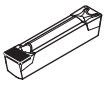
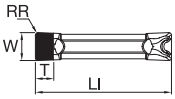
	Seat size	W inch	W mm	Catalog number	RR inch	RR mm	LI inch	LI mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	P KC9125	M KT315	M KC5010	M KC5025	K KC5010	K KC9110	K KC9125	N K313	N K1025	N KC5010	N KC5025	N KD1405	S K313	S K1025	S KC5010	S KC5025	H KC5010	KENNA UNIVERSAL KU30T
A4G-U-GMN	3	.120	3,05	**A4G0305M03U02GMN**	.008	0,2	.79	20	.138	3,5		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	3	.120	3,05	**A4G0305M03U04GMN**	.016	0,4	.79	20	.138	3,5		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	4	.159	4,05	**A4G0405M04U04GMN**	.016	0,4	.79	20	.138	3,5		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	4	.159	4,05	**A4G0405M04U08GMN**	.031	0,8	.79	20	.138	3,5		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	5	.199	5,05	**A4G0505M05U04GMN**	.016	0,4	.98	25	.165	4,2		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	5	.199	5,05	**A4G0505M05U08GMN**	.031	0,8	.98	25	.165	4,2		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	6	.238	6,05	**A4G0605M06U04GMN**	.016	0,4	1.18	30	.193	4,9		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	6	.238	6,05	**A4G0605M06U08GMN**	.031	0,8	1.18	30	.193	4,9	●	●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	6	.238	6,05	**A4G0605M06U12GMN**	.047	1,2	1.18	30	.193	4,9		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	8	.317	8,05	**A4G0805M08U08GMN**	.031	0,8	1.18	30	.252	6,4		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	8	.317	8,05	**A4G0805M08U12GMN**	.047	1,2	1.18	30	.252	6,4		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	10	.396	10,05	**A4G1005M10U08GMN**	.031	0,8	1.18	30	.319	8,1		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	10	.396	10,05	**A4G1005M10U12GMN**	.047	1,2	1.18	30	.319	8,1		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
A4G-U-GMP	3	.120	3,05	**A4G0305M03U02GMP**	.008	0,2	.79	20	.138	3,5	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●
	3	.120	3,05	**A4G0305M03U04GMP**	.016	0,4	.79	20	.138	3,5	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	4	.159	4,05	**A4G0405M04U04GMP**	.016	0,4	.79	20	.138	3,5	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●
	4	.159	4,05	**A4G0405M04U08GMP**	.031	0,8	.79	20	.138	3,5	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●
	5	.199	5,05	**A4G0505M05U04GMP**	.016	0,4	.99	25	.165	4,2	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	5	.199	5,05	**A4G0505M05U08GMP**	.031	0,8	.99	25	.165	4,2	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●
	6	.238	6,05	**A4G0605M06U04GMP**	.016	0,4	1.19	30	.193	4,9		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	6	.238	6,05	**A4G0605M06U08GMP**	.031	0,8	1.19	30	.193	4,9	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●
	6	.238	6,05	**A4G0605M06U12GMP**	.047	1,2	1.19	30	.193	4,9		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	8	.317	8,05	**A4G0805M08U08GMP**	.031	0,8	1.19	30	.252	6,4		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	8	.317	8,05	**A4G0805M08U12GMP**	.047	1,2	1.19	30	.252	6,4		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	10	.396	10,05	**A4G1005M10U08GMP**	.031	0,8	1.19	30	.319	8,1		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
	10	.396	10,05	**A4G1005M10U12GMP**	.047	1,2	1.19	30	.319	8,1		●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	
A4G-P-GMN	3	.125	3,18	**A4G125I03P05GMN**	.008	0,2	.79	20	.135	3,4		●	●				●	●	●			●		●	●		●		●	●	●	
	3	.125	3,18	**A4G125I03P1GMN**	.016	0,4	.79	20	.135	3,4		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.187	4,75	**A4G187I04P1GMN**	.016	0,4	.79	20	.139	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.187	4,75	**A4G187I04P2GMN**	.032	0,8	.79	20	.139	3,5		●	●				●	●	●					●	●				●	●	●	
	6	.250	6,35	**A4G250I06P1GMN**	.016	0,4	1.18	30	.190	4,8		●	●				●	●	●			●		●	●		●		●	●	●	
	6	.250	6,35	**A4G250I06P2GMN**	.032	0,8	1.18	30	.190	4,8		●	●				●	●	●					●	●				●	●	●	
	8	.312	7,93	**A4G312I08P1GMN**	.016	0,4	1.18	30	.249	6,3		●	●				●	●	●			●		●	●		●		●	●	●	
	8	.312	7,93	**A4G312I08P2GMN**	.032	0,8	1.18	30	.249	6,3		●	●				●	●	●					●	●				●	●	●	
	10	.375	9,53	**A4G375I10P1GMN**	.016	0,4	1.18	30	.315	8,0		●	●				●	●	●			●		●	●		●		●	●	●	
	10	.375	9,53	**A4G375I10P2GMN**	.032	0,8	1.18	30	.315	8,0		●	●				●	●	●					●	●				●	●	●	
A4G-P-GMP	3	.118	3,00	**A4G0300M03P02GMP**	.008	0,2	.79	20	.138	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	3	.118	3,00	**A4G0300M03P04GMP**	.016	0,4	.79	20	.138	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.157	4,00	**A4G0400M04P02GMP**	.008	0,2	.79	20	.138	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.157	4,00	**A4G0400M04P04GMP**	.016	0,4	.79	20	.138	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.157	4,00	**A4G0400M04P08GMP**	.031	0,8	.79	20	.138	3,5		●	●				●	●	●			●		●	●		●		●	●	●	
	5	.197	5,00	**A4G0500M05P04GMP**	.016	0,4	.98	25	.165	4,2		●	●				●	●	●			●		●	●		●		●	●	●	
	5	.197	5,00	**A4G0500M05P08GMP**	.031	0,8	.98	25	.165	4,2		●	●				●	●	●			●		●	●		●		●	●	●	
	6	.236	6,00	**A4G0600M06P04GMP**	.016	0,4	1.18	30	.190	4,8		●	●				●	●	●			●		●	●		●		●	●	●	
	6	.236	6,00	**A4G0600M06P08GMP**	.031	0,8	1.18	30	.190	4,8		●	●				●	●	●			●		●	●		●		●	●	●	
	8	.315	8,00	**A4G0800M08P08GMP**	.031	0,8	1.18	30	.249	6,3		●	●				●	●	●			●		●	●		●		●	●	●	
	8	.315	8,00	**A4G0800M08P12GMP**	.047	1,2	1.18	30	.249	6,3		●	●				●	●	●			●		●	●		●		●	●	●	
	10	.394	10,00	**A4G1000M10P08GMP**	.031	0,8	1.18	30	.316	8,0		●	●				●	●	●			●		●	●		●		●	●	●	
	10	.394	10,00	**A4G1000M10P12GMP**	.047	1,2	1.18	30	.316	8,0		●	●				●	●	●			●		●	●		●		●	●	●	

Order example:
Catalog number: **A4G0305M03U02GMN**
Insert grade: **KC5010**

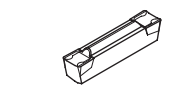
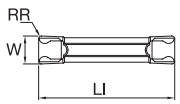
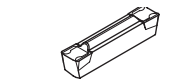
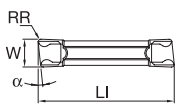
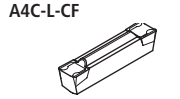
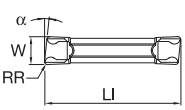
	Seat size	W inch	W mm	Catalog number	Dimensions RC inch	RC mm	LI inch	LI mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	P KC9125	M KT315	M KC5010	M KC5025	K KC5010	K KC9110	K KC9125	N K313	N K1025	N KC5010	N KC5025	N KD1405	S K313	S K1025	S KC5010	S KC5025	H KC5010	KENNA UNIVERSAL KU30T
A4R-U-GMN	3	.120	3,05	**A4R0305M03U00GMN**	.060	1,5	.79	20	.101	2,6		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	4	.159	4,05	**A4R0405M04U00GMN**	.080	2,0	.79	20	.134	3,4		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	5	.199	5,05	**A4R0505M05U00GMN**	.099	2,5	.99	25	.161	4,1		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	6	.238	6,05	**A4R0605M06U00GMN**	.119	3,0	1.19	30	.192	4,9		●	●	●	●		●	●	●	●	●			●	●				●	●	●	●
	8	.317	8,05	**A4R0805M08U00GMN**	.159	4,0	1.19	30	.256	6,5		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
	10	.396	10,05	**A4R1005M10U00GMN**	.198	5,0	1.19	30	.319	8,1		●	●	●	●		●	●	●	●	●			●	●				●	●	●	
A4R-P-GMN	3	.125	3,18	**A4R125I03P00GMN**	.063	1,6	.79	20	.111	2,8		●	●				●	●	●					●	●				●	●	●	
	4	.187	4,75	**A4R187I04P00GMN**	.094	2,4	.79	20	.159	4,0		●	●				●	●	●					●	●				●	●	●	
	6	.250	6,35	**A4R250I06P00GMN**	.125	3,2	1.18	30	.209	5,3		●	●				●	●	●					●	●				●	●	●	
	8	.312	7,94	**A4R312I08P00GMN**	.156	4,0	1.18	30	.256	6,5		●	●				●	●	●					●	●				●	●	●	
	10	.375	9,53	**A4R375I10P00GMN**	.188	4,8	1.18	30	.303	7,7		●	●				●	●	●					●	●				●	●	●	
A4R-P-GMP	3	.118	3,00	**A4R0300M03P00GMP**	.059	1,5	.79	20	.099	2,5		●	●				●	●	●			●		●	●		●		●	●	●	
	4	.157	4,00	**A4R0400M04P00GMP**	.079	2,0	.79	20	.134	3,4		●	●				●	●	●			●		●	●		●		●	●	●	
	5	.197	5,00	**A4R0500M05P00GMP**	.098	2,5	.99	25	.161	4,1		●	●				●	●	●			●		●	●		●		●	●	●	
	6	.236	6,00	**A4R0600M06P00GMP**	.118	3,0	1.18	30	.192	4,9		●	●				●	●	●			●		●	●		●		●	●	●	
	8	.315	8,00	**A4R0800M08P00GMP**	.158	4,0	1.18	30	.256	6,5		●	●				●	●	●			●		●	●		●		●	●	●	
	10	.394	10,00	**A4R1000M10P00GMP**	.197	5,0	1.18	30	.319	8,1		●	●				●	●	●			●		●	●		●		●	●	●	
A4R-P-E	4	.157	4,00	**A4R0400M04P00E**	.079	2,0	.79	20	.118	3,0																●						
	5	.197	5,00	**A4R0500M05P00E**	.099	2,5	.98	25	.118	3,0																●						

Order example:
Catalog number: A4R0305M03U00GMN
Insert grade: KC5010

A4 Groove & Turn Inserts

	Seat size	W inch	W mm	Catalog number	RR inch	RR mm	LI inch	LI mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	P KC9125	M KT315	M KC5010	M KC5025	K KC5010	K KC9110	K KC9125	N K313	N K1025	N KC5010	N KC5025	N KD1405	S K313	S K1025	S KC5010	S KC5025	H KC5010	KENNA UNIVERSAL KU30T
A4G-U-B	3	.120	3,05	**A4G0305M03U02B**	.008	0,2	.79	20	.138	3,5			●					●					●		●		●		●			
	4	.159	4,05	**A4G0405M04U04B**	.016	0,4	.79	20	.134	3,4			●					●					●		●		●		●			
	5	.199	5,05	**A4G0505M05U04B**	.016	0,4	.98	25	.165	4,2			●					●					●		●		●		●			
	6	.238	6,05	**A4G0605M06U04B**	.016	0,4	1.18	30	.193	4,9			●					●					●		●		●		●			
	8	.317	8,05	**A4G0805M08U08B**	.031	0,8	1.18	30	.252	6,4			●					●					●		●		●		●			
	10	.396	10,05	**A4G1005M10U08B**	.031	0,8	1.18	30	.319	8,1			●					●					●		●		●		●			
A4G-P-E	3	.118	3,00	**A4G0300M03P04E**	.016	0,4	.79	20	.118	3,0																●						
	4	.157	4,00	**A4G0400M04P04E**	.016	0,4	.79	20	.118	3,0																●						
	5	.197	5,00	**A4G0500M05P08E**	.031	0,8	.98	25	.118	3,0																●						
																																

Order example:
Catalog number: **A4G0305M03U02B**
Insert grade: **KC5025**

	Seat size	W inch	W mm	Catalog number	Dimensions RR inch	RR mm	LI inch	LI mm	α°	KENNA PERFECT P KT315	P KC5010	P KC5025	P KC9110	P KC9125	M KT315	M KC5010	M KC5025	K KC5010	K KC9110	K KC9125	N K313	N K1025	N KC5010	N KC5025	N KD1405	S K313	S K1025	S KC5010	S KC5025	H KC5010	KENNA UNIVERSAL KU30T
A4C-N-CF				**Neutral**																											
	3	.120	3,05	**A4C0305N00CF02**	.008	0,2	.79	20	-			●					●						●						●		
	4	.159	4,05	**A4C0405N00CF02**	.008	0,2	.79	20	-			●					●						●						●		
A4C-R-CF				**Right hand**																											
	3	.120	3,05	**A4C0305R06CF02**	.008	0,2	.79	20	6			●					●						●						●		
	3	.120	3,05	**A4C0305R10CF02**	.008	0,2	.79	20	10			●					●						●						●		
	4	.159	4,05	**A4C0405R06CF02**	.008	0,2	.79	20	6			●					●						●						●		
	4	.159	4,05	**A4C0405R10CF02**	.008	0,2	.79	20	10			●					●						●						●		
A4C-L-CF				**Left hand**																											
	3	.120	3,05	**A4C0305L06CF02**	.008	0,2	.79	20	6			●					●						●						●		
	3	.120	3,05	**A4C0305L10CF02**	.008	0,2	.79	20	10			●					●						●						●		
	4	.159	4,05	**A4C0405L06CF02**	.008	0,2	.79	20	6			●					●						●						●		
	4	.159	4,05	**A4C0405L10CF02**	.008	0,2	.79	20	10			●					●						●						●		

Order example:
Catalog number: **A4C0305N00CF02**
Insert grade: **KC9125**

A4 Holder Identification System

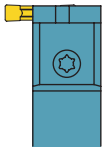
Toolholders

	1. Tooling System	2. Tool Style	3. Support Type	4. Hand of Tool	5. Shank Size	6. Seat Size	7. Max. Grooving Depth
METRIC	A4	S	M	R	2525M	03	17
INCH					16		

1. Tooling System
A4 – Groove & Turn

2. Tool Style
S – straight

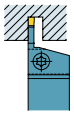
E – end mounted 90°



3. Support Type
M = maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

E = no steel support for face grooving

4. Hand of Tool



R = right hand
L = left hand
N = neutral

5. Shank Size
inch sizes: for square shanks, the number indicates the height and width in 1/16-inch increments (rectangular: 1st digit = width in 1/8-inch increments, 2nd digit = height in 1/4-inch increments)

metric: height x width in mm, letter indicates tool length according to ISO

metric tool length (mm)
K = 125
M = 150
P = 170

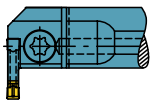
6. Seat Size
03, 04, 05, 06, 08, 10

7. Max. Grooving Depth
in Millimeters

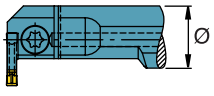
Boring Bars

	1. Steel Bar with Coolant	2. Bar Diameter	3. Bar Length	4. A4 Groove & Turn System	5. Tool Style	6. Support Type	7. Hand of Tool	8. Insert Seat Size	9. Grooving Depth in mm	10. Tool Units
	A	16	R	A4	E	M	R	03	10	N

1. Steel Bar with Coolant

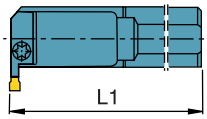


2. Bar Diameter



inch bars:
A two-digit number which indicates the bar diameter in1/16-inch increments.
metric bars:
bar diameter in millimeters

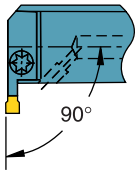
3. Bar Length



inch bars:
R = 8 inch
S = 10 inch
T = 12 inch
metric bars:
R = 200 mm
S = 250 mm
T = 300 mm

4. A4 Groove & Turn System

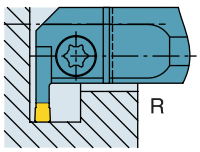
5. Tool Style

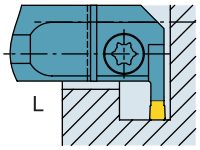


E = end mounted (90 deg.)

6. Support Type
M = maximum support

7. Hand of Tool

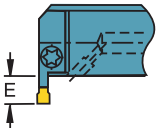




8. Insert Seat Size

Pocket Seat Size	Cutting Width (mm)
03	3,0 – 3,05
04	4,0 – 4,05
05	5,0 – 5,05
06	6,0 – 6,05

9. Grooving Depth in mm

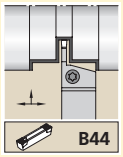


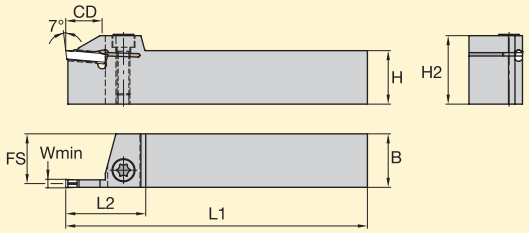
conversions: inch
7 mm = .28
10 mm = .39
12 mm = .47
16 mm = .63

10. Tool Units
M – metric
N – inch

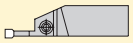
NOTE: Torque recommendation for clamp screw see page E53

A4SM



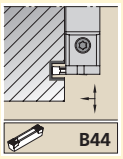


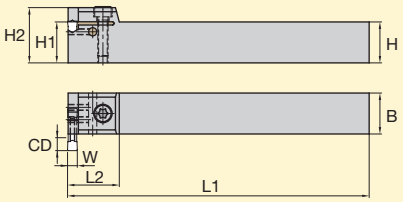
Seat Size	CD	Catalog number Right hand/Left hand	Wmin	H	B	H2	L1	FS	L2	Torx Clamp Screw	Torx
3	.55	**A4SM R/L 100314**	.118	.625	.625	.91	5.00	.57	1.38	**MS2091**	T25
3	.55	**A4SM R/L 120314**	.118	.75	.75	1.06	5.00	.69	1.38	**MS1595**	T30
3	.67	**A4SM R/L 160317**	.118	1.00	1.00	1.26	6.00	.94	1.46	**MS1970**	T30
4	.55	**A4SM R/L 100414**	.157	.625	.625	.91	5.00	.55	1.38	**MS2091**	T25
4	.55	**A4SM R/L 120414**	.157	.75	.75	1.06	5.00	.67	1.38	**MS1595**	T30
4	.67	**A4SM R/L 160417**	.157	1.00	1.00	1.26	6.00	.92	1.46	**MS1970**	T30
4	.67	**A4SM R/L 200417**	.157	1.25	1.25	1.54	6.00	1.17	1.46	**MS1970**	T30
5	.75	**A4SM R/L 120519**	.197	.75	.75	1.10	5.00	.65	1.57	**MS1595**	T30
5	.79	**A4SM R/L 160520**	.197	1.00	1.00	1.30	6.00	.90	1.57	**MS1970**	T30
5	.87	**A4SM R/L 200522**	.197	1.25	1.25	1.54	6.00	1.15	1.65	**MS1970**	T30
6	.79	**A4SM R/L 120620**	.236	.75	.75	1.06	5.00	.65	1.57	**MS1595**	T30
6	.79	**A4SM R/L 160620**	.236	1.00	1.00	1.30	6.00	.89	1.57	**MS1970**	T30
6	.94	**A4SM R/L 160624**	.236	1.00	1.00	1.30	6.00	.89	1.69	**MS1970**	T30
6	1.02	**A4SM R/L 200626**	.236	1.25	1.25	1.57	6.00	1.15	1.77	**MS1970**	T30
6	1.02	**A4SM R/L 240626**	.236	1.50	1.50	1.81	7.00	1.39	1.77	**MS1970**	T30
8	.79	**A4SM R/L 160820**	.315	1.00	1.00	1.34	6.00	.86	1.69	**MS1490**	T45
8	.94	**A4SM R/L 160824**	.315	1.00	1.00	1.34	6.00	.86	1.81	**MS1490**	T45
8	1.02	**A4SM R/L 200826**	.315	1.25	1.25	1.61	7.00	1.11	1.85	**MS1490**	T45
8	1.02	**A4SM R/L 240826**	.315	1.50	1.50	1.85	7.00	1.36	1.85	**MS1490**	T45
10	1.02	**A4SM R/L 201026**	.394	1.25	1.25	1.61	7.00	1.09	1.85	**MS1490**	T45
10	1.02	**A4SM R/L 241026**	.394	1.50	1.50	1.85	7.00	1.33	1.85	**MS1490**	T45

Order example:
Right hand: A4SMR100314 

Left hand: A4SML100314

A4EN

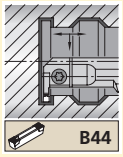




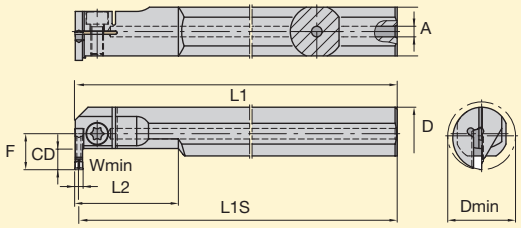
Seat Size	CD	Catalog number Right hand/Left hand	Wmin	Dmin	H	B	H2	L1S	F	L2	Torx Clamp Screw	Torx	Hex Seating Screw	Hex (mm)
3	.20	**A4ENN120305**	.118	2.756	.75	.75	1.06	4.95	.965	.98	**MS2091**	T25	**MS2090**	1,5
3	.20	**A4ENN160305**	.118	2.756	1.00	1.00	1.26	5.95	1.213	.98	**MS2091**	T25	**MS2090**	1,5
4	.28	**A4ENN120407**	.157	3.543	.75	.75	1.06	4.93	1.061	.98	**MS2091**	T25	**MS2090**	1,5
4	.28	**A4ENN160407**	.157	3.543	1.00	1.00	1.26	5.93	1.309	.98	**MS2091**	T25	**MS2090**	1,5
5	.35	**A4ENN120509**	.197	4.724	.75	.75	1.06	4.91	1.148	.98	**MS2091**	T25	**MS2090**	1,5
5	.35	**A4ENN160509**	.197	4.724	1.00	1.00	1.26	5.91	1.398	.98	**MS2091**	T25	**MS2090**	1,5
6	.43	**A4ENN120611**	.236	4.724	.75	.75	1.10	4.89	1.374	1.34	**MS1595**	T30	**193.297**	2,0
6	.43	**A4ENN160611**	.236	4.724	1.00	1.00	1.30	5.89	1.538	1.34	**MS1970**	T30	**193.297**	2,0
6	.43	**A4ENN200611**	.236	4.724	1.25	1.25	1.58	5.89	1.697	1.34	**MS1970**	T30	**193.297**	2,0
8	.43	**A4ENN160811**	.315	4.724	1.00	1.00	1.42	5.85	1.538	1.58	**MS1490**	T45	**193.407**	2,5
8	.43	**A4ENN200811**	.315	4.724	1.25	1.25	1.65	5.85	1.697	1.58	**MS1490**	T45	**193.407**	2,5
10	.43	**A4ENN161011**	.394	4.724	1.00	1.00	1.38	5.82	1.538	1.58	**MS1490**	T45	**193.407**	2,5
10	.43	**A4ENN201011**	.394	4.724	1.25	1.25	1.65	5.82	1.697	1.58	**MS1490**	T45	**193.407**	2,5

Order example:
A4ENN120305

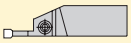
A-A4E



Steel shank with
through coolant

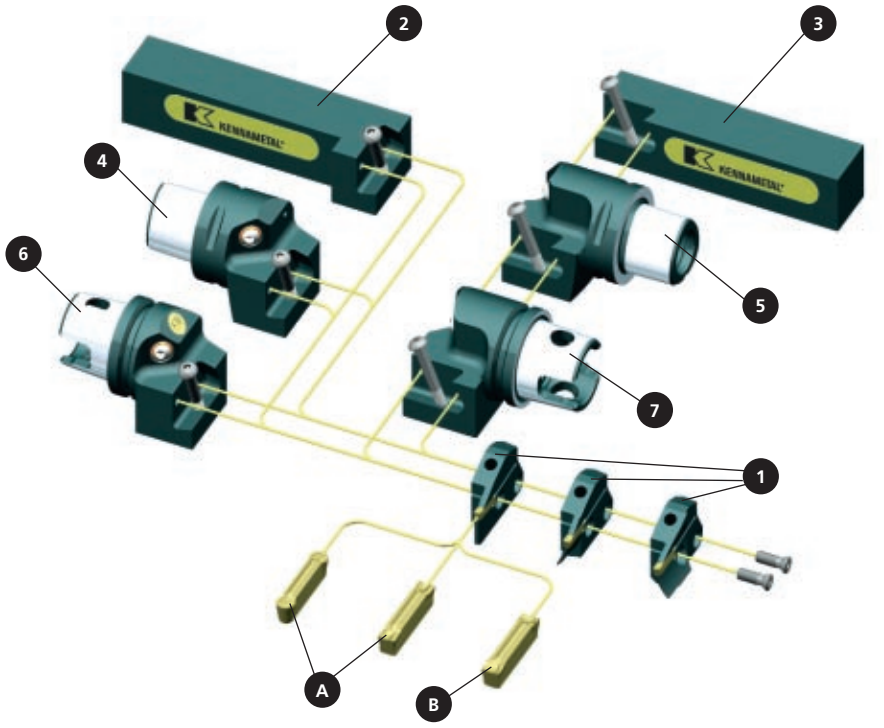


Seat Size	CD	Catalog number Right hand/Left hand	Wmin	D	Dmin	L1	F	L1S	L2	A	Torx Clamp Screw	Torx
3	.276	**A12RA4EM R/L 0307N**	.118	.750	.984	8.00	.512	7.94	1.57	.16	**MS2089**	T25
3	.394	**A16RA4EM R/L 0310N**	.118	1.000	1.260	8.00	.669	7.94	1.97	.20	**MS1595**	T30
3	.472	**A20SA4EM R/L 0312N**	.118	1.250	1.575	10.00	.866	9.94	2.52	.24	**MS1595**	T30
4	.276	**A12RA4EM R/L 0407N**	.157	.750	.984	8.00	.512	7.92	1.57	.16	**MS2089**	T25
4	.394	**A16RA4EM R/L 0410N**	.157	1.000	1.260	8.00	.669	7.92	1.97	.20	**MS1595**	T30
4	.472	**A20SA4EM R/L 0412N**	.157	1.250	1.575	10.00	.866	9.92	2.52	.24	**MS1595**	T30
4	.630	**A24TA4EM R/L 0416N**	.157	1.500	2.047	12.00	1.181	11.92	3.15	.24	**MS1970**	T30
5	.630	**A20SA4EM R/L 0516N**	.197	1.250	1.732	10.00	1.024	9.90	2.52	.24	**MS1595**	T30
5	.630	**A24TA4EM R/L 0516N**	.197	1.500	2.047	12.00	1.181	11.90	3.15	.24	**MS1970**	T30
6	.630	**A20SA4EM R/L 0616N**	.236	1.250	1.732	10.00	1.024	9.92	2.52	.24	**MS1595**	T30
6	.630	**A24TA4EM R/L 0616N**	.236	1.500	2.047	12.00	1.181	11.92	3.15	.24	**MS1970**	T30
6	.630	**A32TA4EM R/L 0616N**	.236	2.000	2.559	12.00	1.378	11.92	3.94	.24	**MS1970**	T30

Order example:
Right hand: **A12RA4EMR0307N** 
Left hand: **A12RA4EML0307N**

A4 Modular Blades Identification System

Modular Grooving Shank Toolholder and Quick-Change Tooling



Legend		page
A	A4 Groove & Turn Inserts	B44 - B46
B	A4 Cut-off Inserts	B47
1	OD and Face Grooving Blades	B53 - B54
2	KGME Toolholder	B56
3	KGMS Toolholder	B56
4	Capto KGME Cutting Unit	B59
5	Capto KGMS Cutting Unit	B59
6	KM KGME Cutting Unit	B58
7	KM KGMS Cutting Unit	B58

By customer demand, Kennametal Inc. and Sandvik® Coromant have entered into an agreement that allows both companies to manufacture, market, and sell KM and Coromant Capto products worldwide. Using the trademark Kennametal Capto, we make available a variety of leading and innovative Kennametal tooling designs utilizing the Coromant Capto coupling.

The manufacture and marketing of Kennametal Capto products and the use of the "Capto" trademark are in accordance with a license granted from Sandvik.

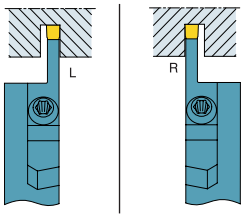
Modular blade assembly for A4 inserts

1. A4 Tooling System

A4M

2. Modular System Size

50



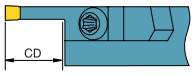
3. Hand of Tool

R

4. Seat Size

Pocket Seat Size	Cutting Width (mm)
03	3,0 – 3,05
04	4,0 – 4,05
05	5,0 – 5,05

04

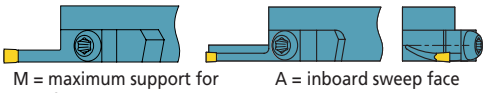


14 mm = .55 in.
19 mm = .75 in.

5. Maximum Groove Depth

14

6. Tool Style

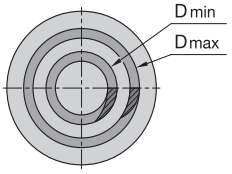


M = maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

A = inboard sweep face grooving support

B = outboard sweep face grooving support

B

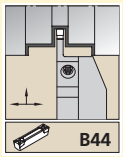


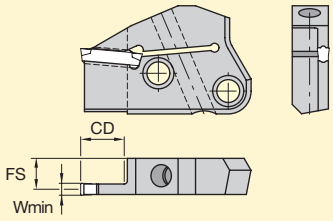
diameters are min and max for outer face groove dia. 999 = unlimited D_{max}

7. Face Grooving Diameter Dmin-Dmax (mm)

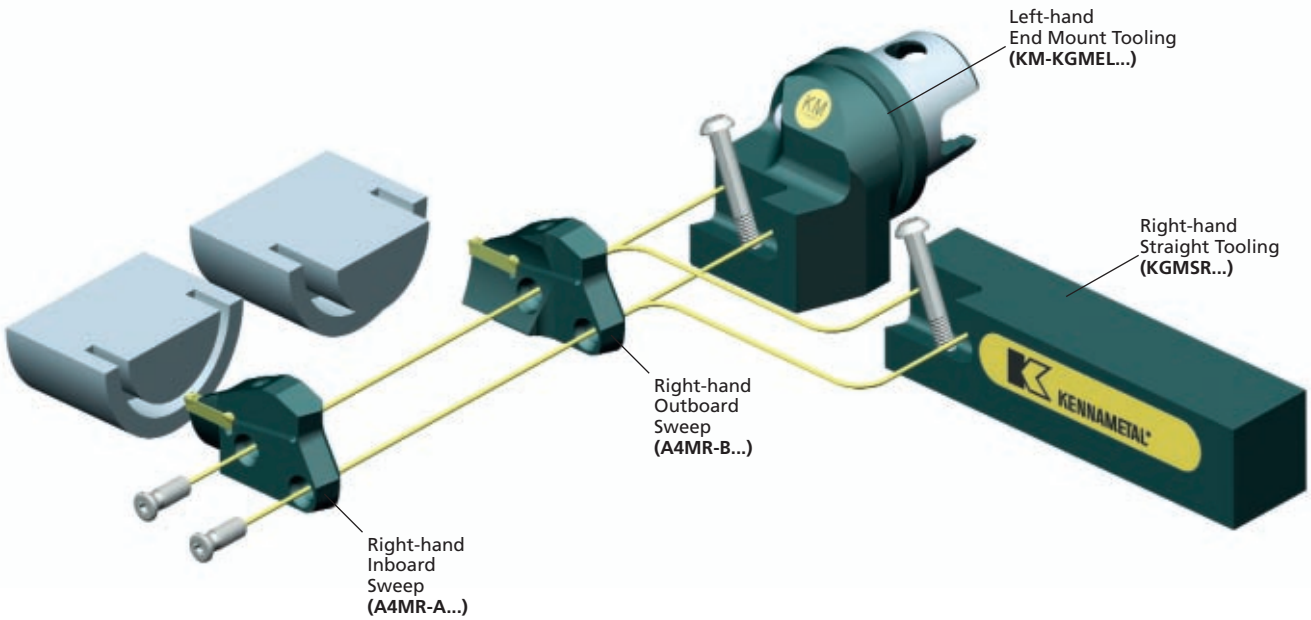
048-072

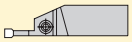
A4M-M

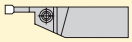




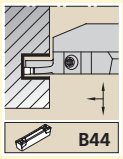
Seat Size	CD	Catalog number Right hand/Left hand	Wmin	FS	Blade Size
3	.55	**A4M50 R/L 0314M**	.118	.413	50
4	.55	**A4M50 R/L 0414M**	.157	.394	50
5	.75	**A4M50 R/L 0519M**	.197	.374	50

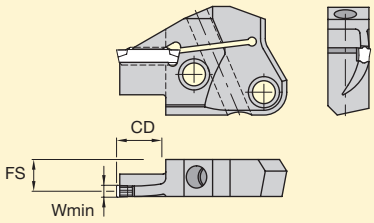


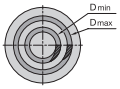
Order example:
Right hand: **A4M50R0314M** 

Left hand: **A4M50L0314M** 

A4M-A INBOARD SWEEP

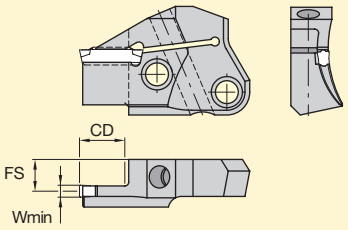


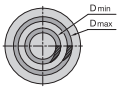




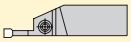
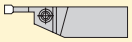
Seat Size	Dmin	Dmax	Catalog number Right hand/Left hand	Wmin	CD	FS	Blade Size
3	1.417	1.890	**A4M50 R/L 0314A036048**	.118	.55	.413	50
3	1.654	2.284	**A4M50 R/L 0314A042058**	.118	.55	.413	50
3	2.047	2.913	**A4M50 R/L 0314A052074**	.118	.55	.413	50
3	2.677	3.937	**A4M50 R/L 0314A068100**	.118	.55	.413	50
3	3.543	6.299	**A4M50 R/L 0314A090160**	.118	.55	.413	50
3	5.118	11.811	**A4M50 R/L 0314A130300**	.118	.55	.413	50
3	11.417	-	**A4M50 R/L 0314A290999**	.118	.55	.413	50
4	1.890	2.835	**A4M50 R/L 0414A048072**	.157	.55	.394	50
4	2.520	3.937	**A4M50 R/L 0414A064100**	.157	.55	.394	50
4	3.622	5.906	**A4M50 R/L 0414A092150**	.157	.55	.394	50
4	5.197	11.811	**A4M50 R/L 0414A132300**	.157	.55	.394	50
4	11.417	-	**A4M50 R/L 0414A290999**	.157	.55	.394	50
5	2.284	3.701	**A4M50 R/L 0519A058094**	.197	.75	.374	50
5	3.150	5.354	**A4M50 R/L 0519A080136**	.197	.75	.374	50
5	4.724	11.811	**A4M50 R/L 0519A120300**	.197	.75	.374	50
5	9.843	-	**A4M50 R/L 0519A250999**	.197	.75	.374	50

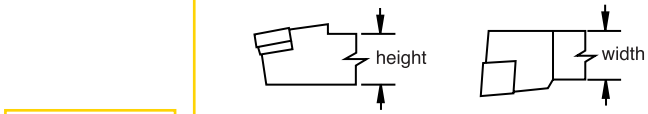
A4M-B OUTBOARD SWEEP



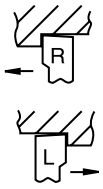


Seat Size	Dmin	Dmax	Catalog number Right hand/Left hand	Wmin	CD	FS	Blade Size
3	1.417	1.890	**A4M50 R/L 0314B036048**	.118	.55	.413	50
3	1.654	2.284	**A4M50 R/L 0314B042058**	.118	.55	.413	50
3	2.047	2.913	**A4M50 R/L 0314B052074**	.118	.55	.413	50
3	2.677	3.937	**A4M50 R/L 0314B068100**	.118	.55	.413	50
3	3.543	6.299	**A4M50 R/L 0314B090160**	.118	.55	.413	50
3	5.118	11.811	**A4M50 R/L 0314B130300**	.118	.55	.413	50
3	11.417	-	**A4M50 R/L 0314B290999**	.118	.55	.413	50
4	1.890	2.835	**A4M50 R/L 0414B048072**	.157	.55	.394	50
4	2.520	3.937	**A4M50 R/L 0414B064100**	.157	.55	.394	50
4	3.622	5.906	**A4M50 R/L 0414B092150**	.157	.55	.394	50
4	5.197	11.811	**A4M50 R/L 0414B132300**	.157	.55	.394	50
4	11.417	-	**A4M50 R/L 0414B290999**	.157	.55	.394	50
5	2.284	3.701	**A4M50 R/L 0519B058094**	.197	.75	.374	50
5	3.150	5.354	**A4M50 R/L 0519B080136**	.197	.75	.374	50
5	4.724	11.811	**A4M50 R/L 0519B120300**	.197	.75	.374	50
5	9.843	-	**A4M50 R/L 0519B250999**	.197	.75	.374	50

Order example:
Right hand: **A4M50R0314A036048**  Left hand: **A4M50L0314A036048** 

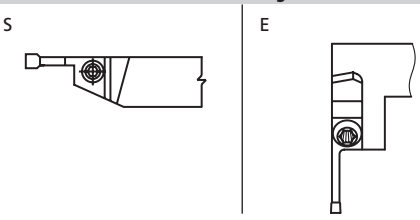


Square Shanks: The number indicates the toolholder cross section in 1/16-inch increments.
Rectangular Shanks: The first digit indicates the number of eighth-inch increments of width and the second digit indicates the number of quarter-inch increments of height.

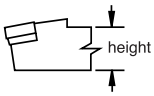


	1. Kennametal Grooving Modular	2. Tool Style	3. Hand of Tool	4. Shank Dimensions	5. Blade Size	6. Tool Units (N = inch)	7. Blade Size
INCH	KGM	S	R	16	50	N	
METRIC				25	25	M	50

2. Tool Style

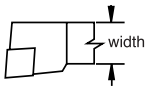


4. Shank Height



shank height in millimeters

5. Shank Width



shank width in millimeters

6. Tool Length

over insert in a support blade with a 12,5 mm D dimension

M = 150 mm
P = 170 mm

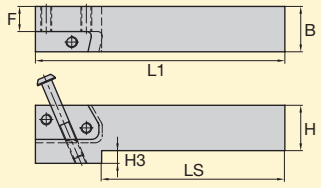
(KGMSR...)

(KGMER...)

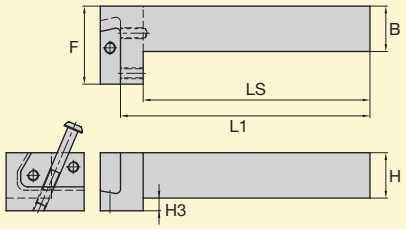
A4 Groove & Turn Modular Toolholder

O.D. Grooving

KGMS..



KGME..



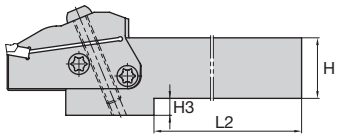
Catalog number Right hand/Left hand	H	B	L1	LS	F	H3	Blade Screw (2 req'd)	Clamp Screw	Torx
KGMS R/L 1650	1.00	1.00	5.5	4.26	.56	.25	**MS1162**	**MS2002**	T25
KGMS R/L 2050	1.25	1.25	5.5	-	.81	-	**MS1162**	**MS2002**	T25
KGMS R/L 2450	1.50	1.50	5.5	-	1.06	-	**MS1162**	**MS2002**	T25
KGME R/L 1650	1.00	1.00	5.5	4.96	1.7	.25	**MS1162**	**MS2002**	T25
KGME R/L 2050	1.25	1.25	5.5	4.96	1.7	-	**MS1162**	**MS2002**	T25
KGME R/L 2450	1.50	1.50	5.5	4.96	1.7	-	**MS1162**	**MS2002**	T25

Note: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque equals 71-88 in.-lbs. (8-10 Nm)

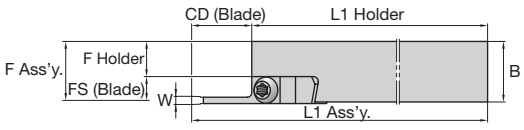
A4 Modular Blade Assemblies

KGMS Toolholder with Modular Blade Assemblies

❷



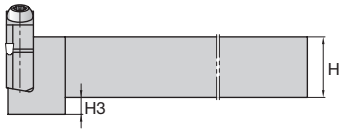
❷



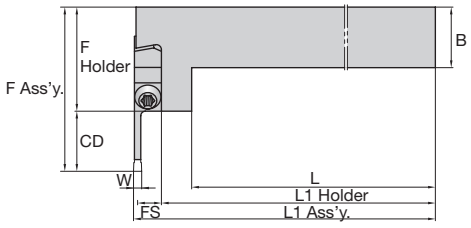
❷ F Ass'y. = F (Holder) + FS (Blade) + W/2
L1 Ass'y. = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies

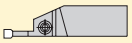
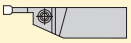
❶

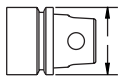


❶

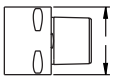


❶ F Ass'y. = F (Holder) + CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

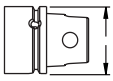
Order example:
Right hand: **KGMSR1650** 
Left hand: **KGMSL1650** 



KM size
KM40 = 40 mm dia.
KM50 = 50 mm dia.
KM63 = 63 mm dia



Kennametal Capto size
C4 = 40 mm dia.
C5 = 50 mm dia.
C6 = 63 mm dia.



KMXMZ size
KM63XMZ = 63 mm dia.

1. System & Size

KM40

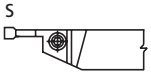
2. Kennametal Grooving Modular

KGM

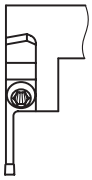
3. Tool Style

S

S



E



4. Hand of Tool

R

5. Blade Size

50

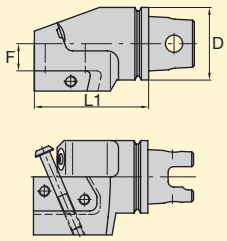
6. Special Conditions

Y =
Mazak Integrex
Y-series machines

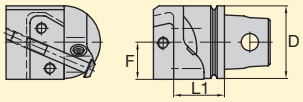
(KM-KGMSR...)

(KM-KGMEL...)

KM-KGMS..

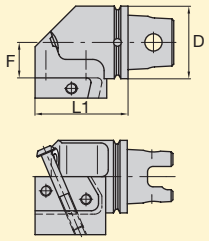


KM-KGME..



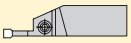
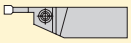
Catalog number Right hand/Left hand	D	L1	F	Blade Screw (2 req'd)	Clamp Screw	Torx
KM40KGMS R/L 50	1.00	2.10	.59	**MS1162**	**MS2002**	T25
KM50KGMS R/L 50	1.25	2.30	.90	**MS1162**	**MS2002**	T25
KM63UTKGMS R/L 50	1.50	2.50	1.22	**MS1162**	**MS2002**	T25
KM40KGME R/L 50	1.57	1.10	0.80	**MS1162**	**MS2002**	T25
KM50KGME R/L 50	1.96	1.49	1.00	**MS1162**	**MS2002**	T25
KM63KGME R/L 50	2.48	1.89	1.28	**MS1162**	**MS2002**	T25
KM80ATCKKGME R/L 50	3.15	2.28	1.59	**MS1162**	**MS2002**	T25

KM-XMZKGMS..

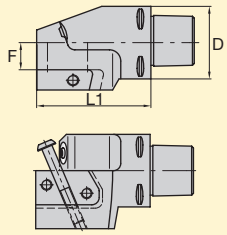


Catalog number Right hand/Left hand	D	L1	F	Blade screw (2 req'd)	Clamp screw	Torx
KM63XMZKGMS R/LF 50Y	2.48	2.5	1.22	**MS1162**	**MS2002**	T25

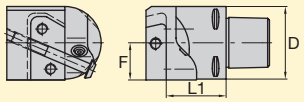
Note: .KGMS..: Right-hand holder uses right-hand blades.
.KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 71-88 in.-lbs. (8-10 Nm)
See Modular Blade assembly diagrams on page B60

Order example:
Right hand: **KM40KGMSR50** 
Left hand: **KM40KGMSL50** 

C-KGMS..

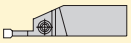
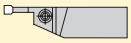


C-KGME..

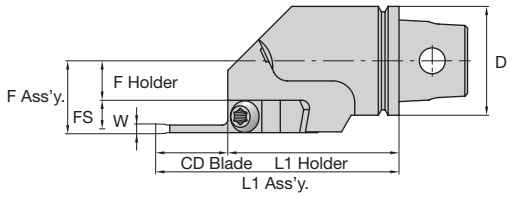


Catalog number Right hand/Left hand	D	L1	F	Blade Screw (2 req'd)	Clamp Screw	Torx
C4KGMS R/L 50	1.57	1.30	0.81	**MS1162**	**MS2002**	T25
C5KGMS R/L 50	1.97	1.69	1.00	**MS1162**	**MS2002**	T25
C6KGMS R/L 50	2.48	1.89	1.28	**MS1162**	**MS2002**	T25
C4KGME R/L 50	1.57	2.50	0.39	**MS1162**	**MS2002**	T25
C5KGME R/L 50	1.97	2.50	0.59	**MS1162**	**MS2002**	T25
C6KGME R/L 50	2.48	2.58	0.87	**MS1162**	**MS2002**	T25

Note: .KGMS..: Right-hand holder uses right-hand blades.
.KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 71-88 in.-lbs. (8-10 Nm)
See Modular Blade assembly diagrams on page B60

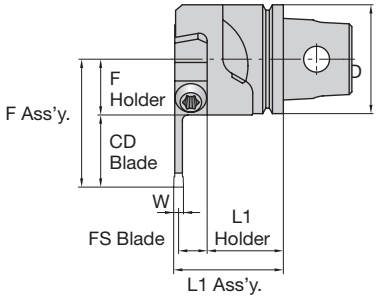
Order example:
Right hand: **C4KGMSR50** 
Left hand: **C4KGMSL50** 

KM-KGMS Toolholder with Modular Blade Assembly



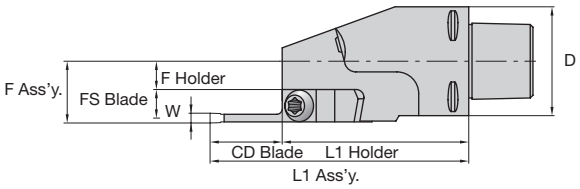
F Ass'y. = F (Holder) + FS (Blade) + W/2
L1 (Ass'y.) = L1 (Holder) + CD (Blade)

KM-KGME Toolholder with Modular Blade Assembly



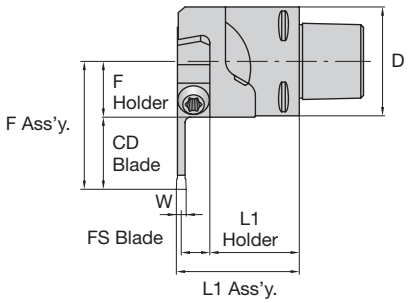
F Ass'y. = F (Holder) + CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

C-KGMS Toolholder with Modular Blade Assembly



F Ass'y. = F (Holder) + FS (Blade) + W/2
L1 (Ass'y.) = L1 (Holder) + CD (Blade)

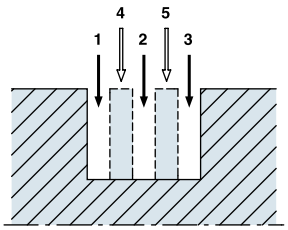
C-KGME Toolholder with Modular Blade Assembly



F Ass'y. = F (Holder) + CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

When groove width is greater than insert width, two methods are possible:

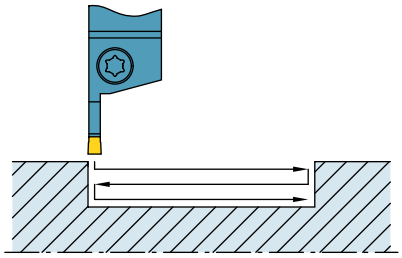
1.



1. Multiple Pass Grooving

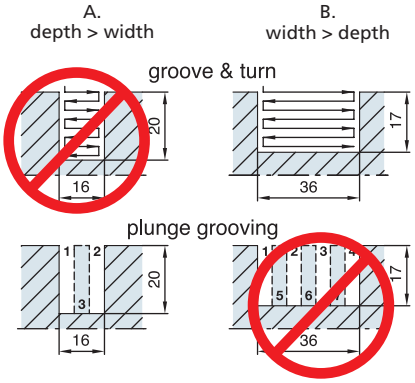
Use the widest possible insert width to achieve optimal chip control and tool life. Make grooves 1, 2, and 3 first...then connect with passes 4 and 5.
For passes 4 and 5, the material removed should be no more than 0.8 times the insert width.

2.



2. Grooving and Turning

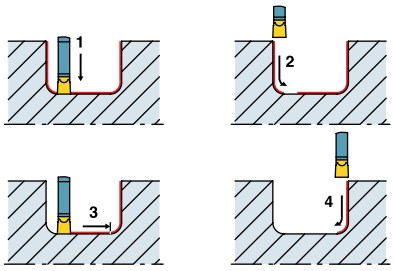
For small and unstable workpieces, this is the preferred method to reduce vibrations experienced when axial grooving. The depth of cut in longitudinal turning should generally be 60%-70% of the groove width. Turning in both directions improves tool life.



Choosing the Best Method:

A. When the groove depth is greater than the groove width, multiple pass plunge grooving offers the best results.

B. When the groove width is greater than the groove depth, groove & turn (plunge/longitudinal turning) is easier and faster.



Finish Profiling

When finish profile machining internal chamfers or radii, take into account that the effective feed rate and chip cross section are reduced (the tool is cutting in both radial and axial directions). The accompanying drawing (left) shows the suggested processing sequence for the final pass, to reduce vibrations.

A4 Grooving Tool Application Guidelines

- Always use good general machining practices.
- Make the machine and workpiece setup as rigid as possible.
- Integral shank toolholders offer the best rigidity. They should be your first toolholder choice, when possible.
- When changing inserts, make sure the new insert locates securely against the toolholder's positive stop.
- Never tighten the clamping screw without an insert in the pocket.
- Toolholder extension out of the tool block should be as short as possible.
- Inserts should cut as close to center as possible or slightly above.
- Dwell time in bottom of groove should be less than three revolutions.
- Recommended cutting speeds and feeds are a starting point. Adjust, as necessary, for optimum tool life and chip control.

Engineering Your Competitive Edge®

KENNAMETAL®

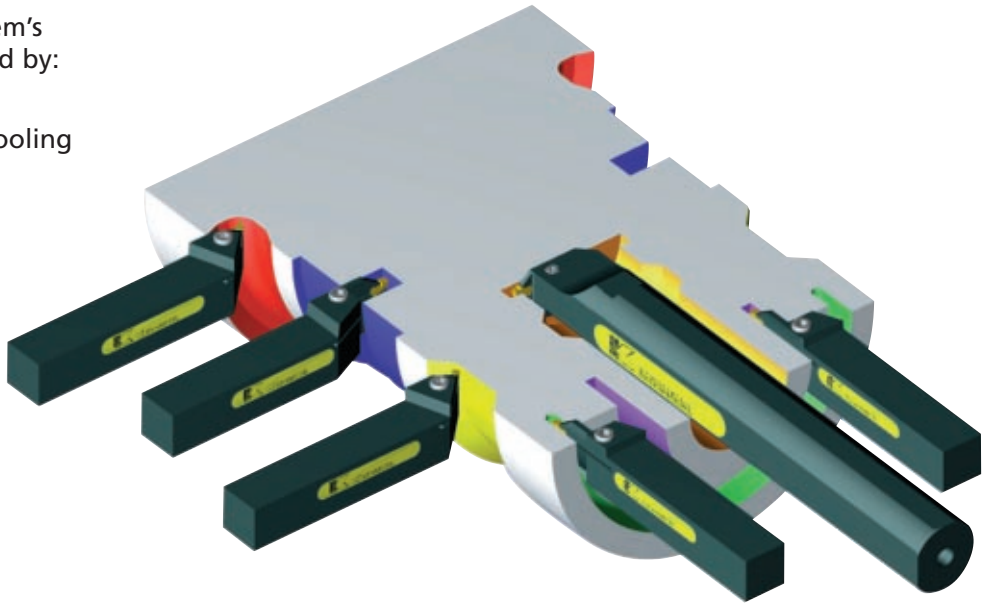
A3 Deep Grooving ...

... the best choice for high productivity – with outstanding application flexibility!

- A3 deep grooving tooling is compatible with square shank, KM, and Kennametal Capto platforms.

- One insert performs:
  - OD operations
  - ID operations
  - face grooving operations

- In addition, the A3 system's performance is enhanced by:
  - TiAlN grades
  - the KENNA PERFECT Tooling Selection System



KENNA PERFECT – A3 Deep Grooving

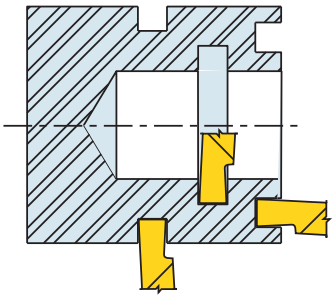
5 Easy Steps to Greater Productivity

What you need to know:

- groove depth, width, and profile
- material to be machined
- application to be performed (Face, OD, or ID grooving)
- toolholder requirements (ie: KM, square shank, right/left)

1st Step – Choose Your System Based on the Groove Depth Required

Top Notch

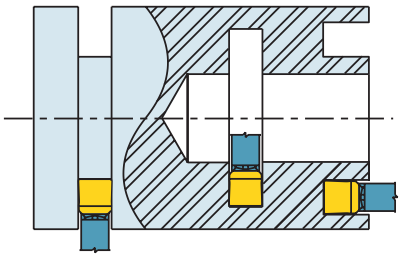


Grooving

For grooving depth ≤ 1.5 x grooving width,

see Top Notch Grooving, page B8.

A3 or A4

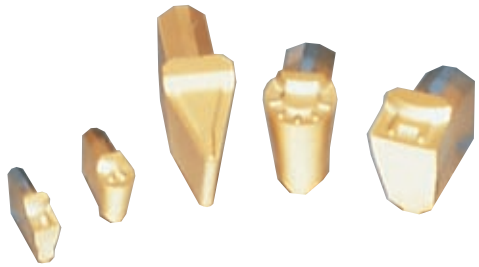


Deep Grooving

For grooving depth ≥ 1.5 x grooving width,

proceed to Step 2 for the A3 Deep Grooving program
or see A4 Groove & Turn program on page B38.

A3 Deep Grooving for deep internal, external, and face grooving applications



System Capabilities

Groove	min.	max.
Width	.087 in. (2,25 mm)	.397 in. (10,05 mm)
Depth	–	1.260 in. (32 mm)

Face grooving diameter range: .984 in. (25 mm) to ∞

2nd Step – Choose Your Toolholder Based on the Application

Note: Toolholders are available as conventional square shank versions and as well as quick-change versions.
Please select equal seat sizes for the insert and the toolholder.

ID grooving applications –> see page B75
Face grooving with integral square shank toolholders –> see page B72
OD grooving with integral square shank toolholders –> see page B71
Face and OD grooving with modular toolholders –> see pages B77 - B82

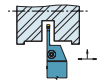
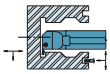
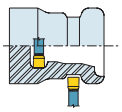
3rd Step – Select Chipbreaker Style and Feed Rate

DF – Deep Finishing

DM – Deep Medium

DR – Deep Roughing

Chipbreaker and Feed Rates – in/rev (mm/rev)

Workpiece Material and Application	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
 Deep OD Grooving	**DM** .002 - .010 (0,05 - 0,25)	**DF** .002 - .006 (0,05 - 0,15)	**DM** .002 - .009 (0,05 - 0,23)	**DF** .002 - .010 (0,05 - 0,25)	**DF** .002 - .005 (0,05 - 0,13)	**CBN tip on request** .002 - .004 (0,05 - 0,10)
	DF .002 - .007 (0,05 - 0,18)	–	–	–	–	–
 Face & ID Grooving	**DF** .002 - .006 (0,05 - 0,15)	**DF** .002 - .005 (0,05 - 0,13)	**DM** .002 - .007 (0,05 - 0,18)	**DF** .002 - .007 (0,05 - 0,18)	**DF** .0015 - .004 (0,04 - 0,10)	**CBN tip on request** .002 - .004 (0,05 - 0,10)
	–	–	**DF** .002 - .006 (0,05 - 0,15)	–	–	–
 Profiling	**DR** .004 - .015 (0,10 - 0,40)	**DF** .002 - .010 (0,05 - 0,25)	**DR** .004 - .015 (0,10 - 0,40)	**DF** .002 - .010 (0,05 - 0,25)	**DF** .002 - .010 (0,05 - 0,25)	**CBN tip on request** .002 - .004 (0,05 - 0,10)
	DF .002 - .010 (0,05 - 0,25)	–	–	–	–	–
	For profiling, the maximum recommended depth of cut is one-third the insert's width.					

NOTE: Use minimum feed rates for narrower grooves and heavier feed rates for wider grooves.
Increase feed rate as operation allows. See Technical Section for additional application information.

4th Step – Select Grade and Speed

Recommendations for Grade and Speed Selection – sfm (m/min)

	Workpiece Material					
Machining Condition	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
high-performance for optimal conditions (clean cuts, good machine condition, higher speed capability)	**KT315** 330 - 750 (100 - 230)	**KT315** 230 - 560 (70 - 170)	**KC5010** 230 - 720 (70 - 220)	**KC5010** 590 - 2800 (180 - 850)	**KC5010** 35 - 360 (10 - 110)	**KB5625*** 390 - 500 (120 - 150)
	KC5010 200 - 600 (60 - 185)	–	–	–	–	–
general purpose (first choice for general machining)	**KC5025** 200 - 525 (60 - 160)	**KC5010** 160 - 450 (50 -140)	**KC5025** 230 - 500 (70 - 150)	**KC5010** 500 - 2400 (150 - 730)	**KC5025** 35 - 200 (10 - 60)	**KB5625*** 260 - 425 (80 - 130)
unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed)	**KC5025** 160 - 360 (50 - 110)	**KC5025** 130 - 300 (40 - 90)	**KC5025** 80 - 450 (25 - 140)	**KC5025** 200 - 1000 (60 - 305)	**KC5025** 35 - 150 (10 - 46)	**KC5010** 35 - 115 (10 - 35)
	–	–	–	**KMF** 200 - 650 (60 - 200)	**KMF** 35 - 100 (10 - 30)	–

*NOTE: PCBN tipped inserts in KB5625 are available on request.

5th Step – Select Insert and Holder from Catalog Pages

Note: The insert seat size and cutting width must match the seat size and cutting width of your toolholder selection.

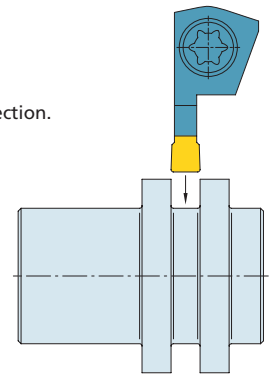
Example for A3 – Deep Grooving:

material: low-alloyed steel
groove depth: .5 in. (12 mm)
groove width: .250 in. (6,35 mm)
smooth cut

Recommendation:

insert: A3G250I06P1DF
grade: KC5010
insert width: .250 in. (6,35 mm)
insert seat size: 6

toolholder: A3SML2525M0616
grooving depth: .630 in. (16 mm)
seat size: 6



speed: 570 sfm (180 m/min)
plunge feed: .008 ipr (0,15 mm)

Congratulations!

You have successfully maximized your productivity by selecting the best A3 insert geometry, grade, and cutting specifications for your application!

A3 Insert Identification System

Deep Grooving

1. Type of Program	2. Insert Style	3. Groove Width	4. Units	5. Insert Size	6. Insert Tolerance	7. Corner Radii	8. Chip-breaker
A3	G	0400	M	04	P	02	DF

1. Type of Program

A3 Deep Grooving

2. Insert Style

G = square
R = full radius
V = V-shape 35°

3. Groove Width

expressed in .001 inch or1/100 mm
0000 for V shape

4. Units

I = inch
M = metric

5. Insert Size

03
(*)3S
04
(*)4S
05
06
08
10

6. Insert Tolerance

P = precision ground grooving width tolerance: ±.001 in. (0,025 mm)

U = utility molded grooving width tolerance:

3,05-4,05: $\frac{+.006}{-0}$ in. $\frac{(+0,15\ mm)}{-0}$

5,05-10,05: $\frac{+.010}{-0}$ in. $\frac{(+0,25\ mm)}{-0}$

7. Corner Radii

inch	metric
0	01
05 = .008	02
1 = .016	04
2 = .032	08
3 = .047	12
4 = .062	16

full radius = 00

8. Chip-breaker

DF = Deep Finishing
DM = Deep Medium
DR = Deep Roughing

(*) 3S/4S designates a small size insert for face grooving of small diameters.

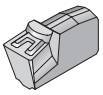
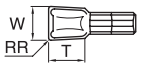
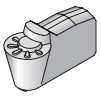
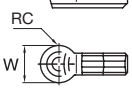
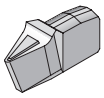
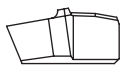
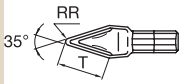
	Seat Size	W inch	W mm	Catalog number	Dimensions RR inch	RR mm	RC inch	RC mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	N KMF	N KC5010	N KC5025	S KMF	S KC5010	S KC5025	H KC5010
A3G-P-DF	3	.118	3,0	**A3G0300M03P02DF**	.008	0,2	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3	.118	3,0	**A3G0300M03P04DF**	.016	0,4	-	-	.138	3,5			●			●		●			●			●	
	4	.157	4,0	**A3G0400M04P02DF**	.008	0,2	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4	.157	4,0	**A3G0400M04P04DF**	.016	0,4	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4	.157	4,0	**A3G0400M04P08DF**	.032	0,8	-	-	.138	3,5			●			●		●			●			●	
	5	.197	5,0	**A3G0500M05P02DF**	.008	0,2	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5	.197	5,0	**A3G0500M05P04DF**	.016	0,4	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5	.197	5,0	**A3G0500M05P08DF**	.032	0,8	-	-	.177	4,5			●			●		●			●			●	
	6	.236	6,0	**A3G0600M06P04DF**	.016	0,4	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.236	6,0	**A3G0600M06P08DF**	.032	0,8	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.236	6,0	**A3G0600M06P12DF**	.047	1,2	-	-	.177	4,5			●			●		●			●			●	
	8	.315	8,0	**A3G0800M08P04DF**	.016	0,4	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.315	8,0	**A3G0800M08P08DF**	.032	0,8	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A3R-P-DF	3	.118	3,0	**A3R0300M03P00DF**	-	-	.059	1,5	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4	.157	4,0	**A3R0400M04P00DF**	-	-	.079	2,0	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5	.197	5,0	**A3R0500M05P00DF**	-	-	.098	2,5	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.236	6,0	**A3R0600M06P00DF**	-	-	.118	3,0	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.315	8,0	**A3R0800M08P00DF**	-	-	.158	4,0	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A3G-P-DF Face Grooving*	3S	.118	3,0	**A3G0300M3SP02DF**	.008	0,2	-	-	.138	3,5		●	●		●	●	●	●		●	●		●	●	●
	3S	.118	3,0	**A3G0300M3SP04DF**	.016	0,4	-	-	.138	3,5		●	●		●	●	●	●		●	●		●	●	●
	4S	.157	4,0	**A3G0400M4SP02DF**	.008	0,2	-	-	.138	3,5		●	●		●	●	●	●		●	●		●	●	●
	4S	.157	4,0	**A3G0400M4SP04DF**	.016	0,4	-	-	.138	3,5		●	●		●	●	●	●		●	●		●	●	●
	4S	.157	4,0	**A3G0400M4SP08DF**	.032	0,8	-	-	.138	3,5		●	●		●	●	●	●		●	●		●	●	●
A3R-P-DF Face Grooving*	3S	.118	3,0	**A3R0300M3SP00DF**	-	-	.059	1,5	-	-		●	●		●	●	●	●		●	●		●	●	●
	4S	.157	4,0	**A3R0400M4SP00DF**	-	-	.079	2,0	-	-		●	●		●	●	●	●		●	●		●	●	●

* Face Grooving for small diameter .98 to 2.36 in. (25 to 60 mm)

Order example:
Catalog number: A3G0300M03P02DF
Insert grade: KT315

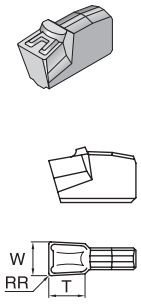
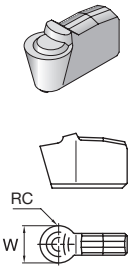
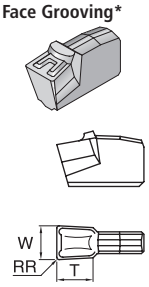
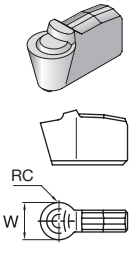
A3 Deep Grooving Inserts

Molded Metric Width

	Seat Size	W inch	W mm	Catalog number	Dimensions RR inch	RR mm	RC inch	RC mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	N KMF	N KC5010	N KC5025	S KMF	S KC5010	S KC5025	H KC5010
A3G-U-DM	3	.120	3,05	**A3G0305M03U02DM**	.008	0,2	-	-	.138	3,5	●		●	●		●		●			●			●	
	4	.159	4,05	**A3G0405M04U02DM**	.008	0,2	-	-	.138	3,5	●		●	●		●		●			●			●	
	5	.199	5,05	**A3G0505M05U02DM**	.008	0,2	-	-	.177	4,5	●		●	●		●		●			●			●	
	6	.238	6,05	**A3G0605M06U04DM**	.016	0,4	-	-	.177	4,5	●		●	●		●		●			●			●	
	8	.317	8,05	**A3G0805M08U04DM**	.016	0,4	-	-	.236	6,0	●		●	●		●		●			●			●	
	10	.396	10,05	**A3G1005M10U05DM**	.020	0,5	-	-	.236	6,0			●			●		●	●		●	●		●	
A3R-U-DR	3	.120	3,05	**A3R0305M03U00DR**	-	-	.060	1,5	-	-	●		●	●		●		●			●			●	
	4	.159	4,05	**A3R0405M04U00DR**	-	-	.080	2,0	-	-	●		●	●		●		●			●			●	
	5	.199	5,05	**A3R0505M05U00DR**	-	-	.099	2,5	-	-	●		●	●		●		●			●			●	
	6	.238	6,05	**A3R0605M06U00DR**	-	-	.119	3,0	-	-	●		●	●		●		●			●			●	
	8	.317	8,05	**A3R0805M08U00DR**	-	-	.158	4,0	-	-	●		●	●		●		●			●			●	
																									
A3V-U-DM*	4	-	-	**A3V0000M04U02DM**	.008	0,2			.236	6,0	●		●	●		●		●			●			●	
	8	-	-	**A3V0000M08U08DM**	.032	0,8			.433	11,0	●		●	●		●		●			●			●	
																									
																									

*NOTE: A3V-U-DM insert can be used in A3US... or A3PS... toolholder only, see page B73

Order example:
Catalog number: A3G0305M03U02DM
Insert grade: KT315

	Seat Size	W inch	W mm	Catalog number	Dimensions RR inch	RR mm	RC inch	RC mm	T inch	T mm	KENNA PERFECT P KT315	P KC5010	P KC5025	M KT315	M KC5010	M KC5025	K KC5010	K KC5025	N KMF	N KC5010	N KC5025	S KMF	S KC5010	S KC5025	H KC5010
A3G-P-DF 	3	.093	2,36	**A3G093I03P05DF**	.008	0,2	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3	.125	3,18	**A3G125I03P05DF**	.008	0,2	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4	.125	3,18	**A3G125I04P05DF**	.008	0,2	-	-	.138	3,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5	.187	4,75	**A3G187I05P05DF**	.008	0,2	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.218	5,54	**A3G218I06P1DF**	.016	0,4	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.218	5,54	**A3G218I06P2DF**	.032	0,8	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.250	6,35	**A3G250I06P1DF**	.016	0,4	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.250	6,35	**A3G250I06P2DF**	.032	0,8	-	-	.177	4,5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.250	6,35	**A3G250I08P1DF**	.016	0,4	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.250	6,35	**A3G250I08P2DF**	.032	0,8	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.312	7,93	**A3G312I08P1DF**	.016	0,4	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.312	7,93	**A3G312I08P2DF**	.032	0,8	-	-	.236	6,0	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A3R-P-DF 	3	.093	2,36	**A3R093I03P00DF**	-	-	.047	1,2	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3	.125	3,18	**A3R125I03P00DF**	-	-	.063	1,6	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	4	.125	3,18	**A3R125I04P00DF**	-	-	.063	1,6	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5	.187	4,75	**A3R187I05P00DF**	-	-	.094	2,4	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.218	5,54	**A3R218I06P00DF**	-	-	.109	2,8	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	6	.250	6,35	**A3R250I06P00DF**	-	-	.125	3,2	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.250	6,35	**A3R250I08P00DF**	-	-	.125	3,2	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	8	.312	7,93	**A3R312I08P00DF**	-	-	.156	4,0	-	-	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
A3G-P-DF Face Grooving* 	3S	.125	3,18	**A3G125I3SP05DF**	.008	0,2	-	-	.138	3,5			●			●		●			●			●	
A3R-P-DF Face Grooving* 	3S	.125	3,18	**A3R125I3SP00DF**	-	-	.063	1,6	.138	3,5			●			●		●			●			●	

* Face Grooving for small diameter .98 to 2.36 in. (25 to 60 mm)

Order example:
Catalog number: A3G093I03P05DF
Insert grade: KT315

A3 Toolholder Identification System

Deep Grooving

	1. A3 Screw-Clamp Holder	2. Tool Style		3. Support Type	4. Hand of Tool	5. Shank Size	6. Seat Size	7. Max. Cutting Depth	8. Face Grooving Diameter in Inches (optional)
METRIC	A3	S	S	R	2525M	03		26	
INCH					16				

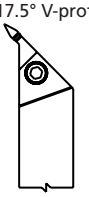
1. A3 Screw-Clamp Holder

2. Tool Style

S = straight

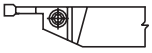
D = 45° profiling

U = 93° V-profiling
P = 117.5° V-profiling



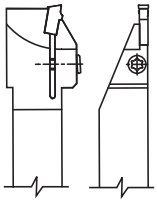
3. Support Type

S = standard support for a range of groove widths and straight clearance for unlimited workpiece diameters



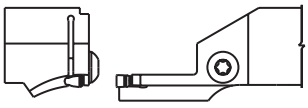
M = maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

C = reinforced maximum support with circular clearance

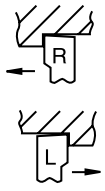


A = inboard sweep face grooving toolholder

B = outboard sweep face grooving toolholder



4. Hand of Tool



R = right
L = left
N = neutral

5. Shank Size

inch sizes: for square shanks, the number indicates the height and width in 1/16-inch increments (rectangular: 1st digit = width in 1/8-inch increments, 2nd digit = height in 1/4-inch increments)

metric: height x width in mm, letter indicates tool length according to ISO

metric tool length (mm)

J = 110 K = 125 M = 150 P = 170 X = other length

6. Seat Size

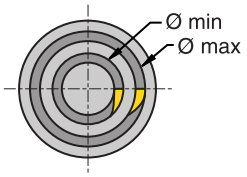
Pocket Seat Size	Cutting Width (mm)
03	3,05
04/4S	4,05
05	5,05
06	6,05
08	8,05
10	10,05

7. Max. Cutting Depth

in millimeters

8. Face Grooving Diameter in Inches (optional)

Ø min – Ø max



Screw-Clamping Holder Options

A2 inserts are designed to fit all A3-style holders.

Example:
A3SCR-1603-26

circular clearance

C-style reinforced maximum support toolholder with circular clearance

- provides maximum support for cut-off operations
- for cut-off to center or small through-hole applications
- ideal for A3 deep grooving operations as well

Example:
A3SSR-1605-26

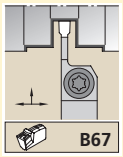
straight clearance

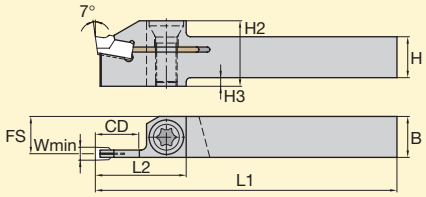
S-style standard support toolholder with straight clearance

- provides maximum flexibility
- unlimited diameter capability for cut-off to through-hole applications
- narrower support blade width allows full insert width flexibility for A3 deep grooving operations
- straight clearance is also available in selected M-style maximum support integral shank and modular toolholders

NOTE: A2 inserts can be used in A3 holders with equal seat sizes.
Torque recommendation for clamp screw see page E53

A3SS

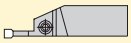




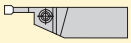
Seat Size	CD	Catalog number Right hand/Left hand	Wmin	H	B	FS	L1	L2	H2	H3	Clamp Screw	Torx
3	.390	**A3SS R/L 060310**	.087	.375	.375	.340	3.500	.790	.600	.080	**MS1160**	T20
3	.390	**A3SS R/L 080310**	.087	.500	.500	.465	3.500	.790	.600	-	**MS1160**	T20
3	.630	**A3SS R/L 080316**	.087	.500	.500	.465	3.500	1.100	1.040	.320	**MS1944**	T25
3	.630	**A3SS R/L 100316**	.087	.625	.625	.590	4.500	1.100	1.040	.160	**MS1944**	T25
3	.630	**A3SS R/L 120316**	.087	.750	.750	.715	4.500	1.180	1.040	-	**MS1944**	T25
3	.630	**A3SS R/L 160316**	.087	1.000	1.000	.965	6.000	1.180	1.240	-	**MS1944**	T25
3	1.020	**A3SS R/L 160326**	.087	1.000	1.000	.965	6.000	1.650	1.240	-	**MS1944**	T25
4	.390	**A3SS R/L 080410**	.118	.500	.500	.453	3.500	1.100	1.040	.287	**MS1944**	T25
4	.510	**A3SS R/L 100413**	.118	.625	.625	.578	4.500	1.100	1.080	.162	**MS1944**	T25
4	.750	**A3SS R/L 100419**	.118	.625	.625	.578	4.500	1.650	1.040	.162	**MS1595**	T30
4	.510	**A3SS R/L 120413**	.118	.750	.750	.703	4.500	1.140	1.040	-	**MS1944**	T25
4	.750	**A3SS R/L 120419**	.118	.750	.750	.703	4.500	1.650	1.040	-	**MS1595**	T30
4	.630	**A3SS R/L 160416**	.118	1.000	1.000	.953	6.000	1.650	1.240	-	**MS1595**	T30
4	1.020	**A3SS R/L 160426**	.118	1.000	1.000	.953	6.000	1.650	1.240	-	**MS1595**	T30
4	1.020	**A3SS R/L 200426**	.118	1.250	1.250	1.203	6.000	1.650	1.500	-	**MS1595**	T30
4	1.260	**A3SS R/L 200432**	.118	1.250	1.250	1.203	6.000	1.970	1.500	-	**MS1595**	T30
5	.510	**A3SS R/L 120513**	.157	.750	.750	.683	6.000	1.260	1.040	-	**MS1595**	T30
5	.750	**A3SS R/L 120519**	.157	.750	.750	.683	6.000	1.650	1.040	-	**MS1595**	T30
5	.630	**A3SS R/L 160516**	.157	1.000	1.000	.933	6.000	1.260	1.240	-	**MS1595**	T30
5	1.020	**A3SS R/L 160526**	.157	1.000	1.000	.933	6.000	1.650	1.240	-	**MS1595**	T30
5	1.020	**A3SS R/L 200526**	.157	1.250	1.250	1.183	6.000	1.650	1.530	-	**MS1595**	T30
5	1.260	**A3SS R/L 200532**	.157	1.250	1.250	1.183	6.000	2.100	1.520	-	**MS1595**	T30
6	.630	**A3SS R/L 120616**	.197	.750	.750	.663	4.500	1.280	1.040	-	**MS1595**	T30
6	.630	**A3SS R/L 160616**	.197	1.000	1.000	.913	6.000	1.260	1.240	-	**MS1595**	T30
6	1.020	**A3SS R/L 160626**	.197	1.000	1.000	.913	6.000	1.650	1.240	-	**MS1595**	T30
6	1.020	**A3SS R/L 200626**	.197	1.250	1.250	1.163	6.000	1.650	1.530	-	**MS1595**	T30
6	1.260	**A3SS R/L 200632**	.197	1.250	1.250	1.163	6.000	2.100	1.530	-	**MS1595**	T30
8	.750	**A3SS R/L 160819**	.236	1.000	1.000	.894	6.000	1.970	1.300	-	**MS1875**	T45
8	1.020	**A3SS R/L 160826**	.236	1.000	1.000	.894	6.000	1.970	1.300	-	**MS1875**	T45
8	1.020	**A3SS R/L 200826**	.236	1.250	1.250	1.144	6.000	2.090	1.560	-	**MS1875**	T45
8	1.260	**A3SS R/L 200832**	.236	1.250	1.250	1.144	6.000	2.090	1.560	-	**MS1875**	T45
10	1.260	**A3SS R/L 201032**	.375	1.250	1.250	1.085	6.000	2.090	1.560	-	**MS1875**	T45

NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Seat size 8 inserts can be used in seat size 8 and 10 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.

Order example:
Right hand: A3SSR060310



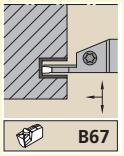
Left hand: A3SSL060310

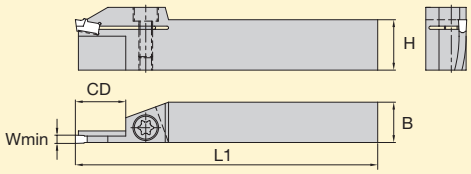


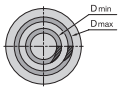
A3 Deep Grooving Toolholders

Face Grooving

A3SA

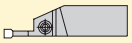




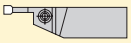


Seat Size	Dmin	Dmax	Catalog number Right hand/Left hand	Wmin	CD	H	B	L1	Clamp Screw	Torx
4	2.362	2.953	**A3SA R/L 120425060075**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	2.953	3.937	**A3SA R/L 120425075100**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	3.937	7.087	**A3SA R/L 120425100180**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	7.087	9.843	**A3SA R/L 120425180250**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	9.843	13.780	**A3SA R/L 120425250350**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	13.780	-	**A3SA R/L 120425350999**	.158	.980	.750	.750	6.000	**MS1595**	T30
4	2.362	2.953	**A3SA R/L 160425060075**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4	2.953	3.937	**A3SA R/L 160425075100**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4	3.937	7.087	**A3SA R/L 160425100180**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4	7.087	9.843	**A3SA R/L 160425180250**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4	9.843	13.780	**A3SA R/L 160425250350**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4	13.780	-	**A3SA R/L 160425350999**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4S	.984	1.181	**A3SA R/L 124S10025030**	.158	.390	.750	.750	6.000	**MS1595**	T30
4S	1.181	1.378	**A3SA R/L 124S10030035**	.158	.390	.750	.750	6.000	**MS1595**	T30
4S	1.378	1.575	**A3SA R/L 124S20035040**	.158	.790	.750	.750	6.000	**MS1595**	T30
4S	1.575	1.969	**A3SA R/L 124S25040050**	.158	.980	.750	.750	6.000	**MS1595**	T30
4S	1.969	2.362	**A3SA R/L 124S25050060**	.158	.980	.750	.750	6.000	**MS1595**	T30
4S	.984	1.181	**A3SA R/L 164S10025030**	.158	.390	1.000	1.000	6.000	**MS1595**	T30
4S	1.181	1.378	**A3SA R/L 164S10030035**	.158	.390	1.000	1.000	6.000	**MS1595**	T30
4S	1.378	1.575	**A3SA R/L 164S20035040**	.158	.790	1.000	1.000	6.000	**MS1595**	T30
4S	1.575	1.969	**A3SA R/L 164S25040050**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
4S	1.969	2.362	**A3SA R/L 164S25050060**	.158	.980	1.000	1.000	6.000	**MS1595**	T30
5+6	2.362	2.953	**A3SA R/L 120525060075**	.197	.980	.750	.750	6.000	**MS1595**	T30
5+6	2.953	3.937	**A3SA R/L 120530075100**	.197	1.180	.750	.750	6.000	**MS1595**	T30
5+6	3.937	7.087	**A3SA R/L 120530100180**	.197	1.180	.750	.750	6.000	**MS1595**	T30
5+6	7.087	9.843	**A3SA R/L 120530180250**	.197	1.180	.750	.750	6.000	**MS1595**	T30
5+6	9.843	13.780	**A3SA R/L 120530250350**	.197	1.180	.750	.750	6.000	**MS1595**	T30
5+6	13.780	-	**A3SA R/L 120530350999**	.197	1.180	.750	.750	6.000	**MS1595**	T30
5+6	2.362	2.953	**A3SA R/L 160525060075**	.197	.980	1.000	1.000	6.000	**MS1595**	T30
5+6	2.953	3.937	**A3SA R/L 160530075100**	.197	1.180	1.000	1.000	6.000	**MS1595**	T30
5+6	3.937	7.087	**A3SA R/L 160530100180**	.197	1.180	1.000	1.000	6.000	**MS1595**	T30
5+6	7.087	9.843	**A3SA R/L 160530180250**	.197	1.180	1.000	1.000	6.000	**MS1595**	T30
5+6	9.843	13.780	**A3SA R/L 160530250350**	.197	1.180	1.000	1.000	6.000	**MS1595**	T30
5+6	13.780	-	**A3SA R/L 160530350999**	.197	1.180	1.000	1.000	6.000	**MS1595**	T30

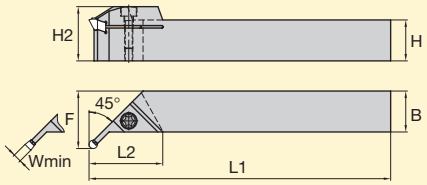
Order example:
Right hand: A3SAR120425060075



Left hand: A3SAL120425060075

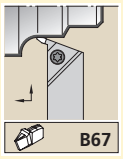


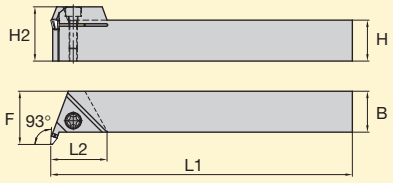
A3DS



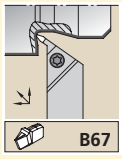
Seat Size	Wmin	Catalog number Right hand/Left hand	H	B	L1	L2	F	H2	Clamp Screw	Torx
3 + 4	.158	**A3DS R/L 1604**	1.00	1.00	6.00	1,34	1,24	1,24	**MS1944**	T25
5 + 6	.197	**A3DS R/L 1606**	1.00	1.00	6.00	1,57	1,24	1,24	**MS1595**	T30

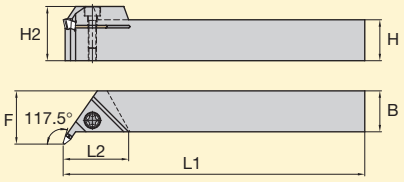
A3US





A3PS



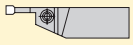


Seat* Size	Wmin	Catalog number Right hand/Left hand	H	B	L1	L2	F	H2	Clamp Screw	Torx
		Approach angle 93°								
4	-	**A3US R/L 1604**	1.00	1.00	6.00	1,34	1,25	1,24	**MS1595**	T30
8	-	**A3US R/L 1608**	1.00	1.00	6.00	1,96	1,25	1,28	**MS1875**	T45
		Approach angle 117.5°								
4	-	**A3PS R/L 1604**	1.00	1.00	6.00	1,26	1,25	1,24	**MS1595**	T30
8	-	**A3PS R/L 1608**	1.00	1.00	6.00	1,96	1,25	1,28	**MS1875**	T45

*NOTE: Insert A3V-U-DM can be used only

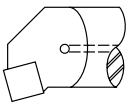
Order example:
Right hand: **A3DSR1604**

Left hand: **A3DSL1604**



A3 Boring Bar Identification System

Deep Grooving

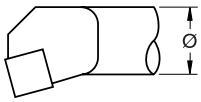


1. Steel Bar with coolant

A

2. Bar Diameter

16



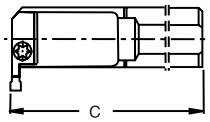
inch bars:
A two-digit number which indicates the bar diameter in1/16-inch increments.
metric bars:
bar diameter in millimeters

4. A3 System

R

3. Bar Length

A3



inch bars:
R = 8 inch
S = 10 inch
T = 12 inch
metric bars:
R = 200 mm
S = 250 mm
T = 300 mm

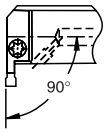
S = standard support for a wide range of groove widths

6. Support Type

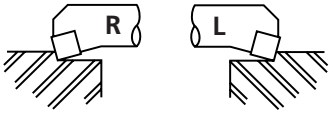
E

5. Tool Style

S



E = end mounted (90 deg.)



7. Hand of Tool

R

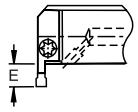
8. Seat Size

03

Pocket Seat Size	Cutting Width (mm)
03	2,25 - 3,05
04	3,05 - 4,05
05	4,05 - 5,05
06	5,05 - 6,05
08	6,05 - 8,05

9. Grooving Depth in mm

05



conversions: inch
5 mm = .20
8 mm = .32
10 mm = .39
12 mm = .47
15 mm = .59

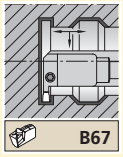
M – metric
N – inch

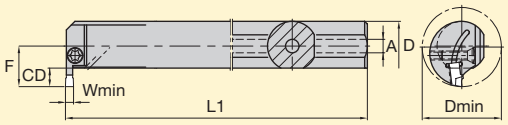
10. Tool Units

N

NOTE: Torque recommendation for clamp screw see page E53

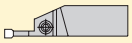
A-A3E





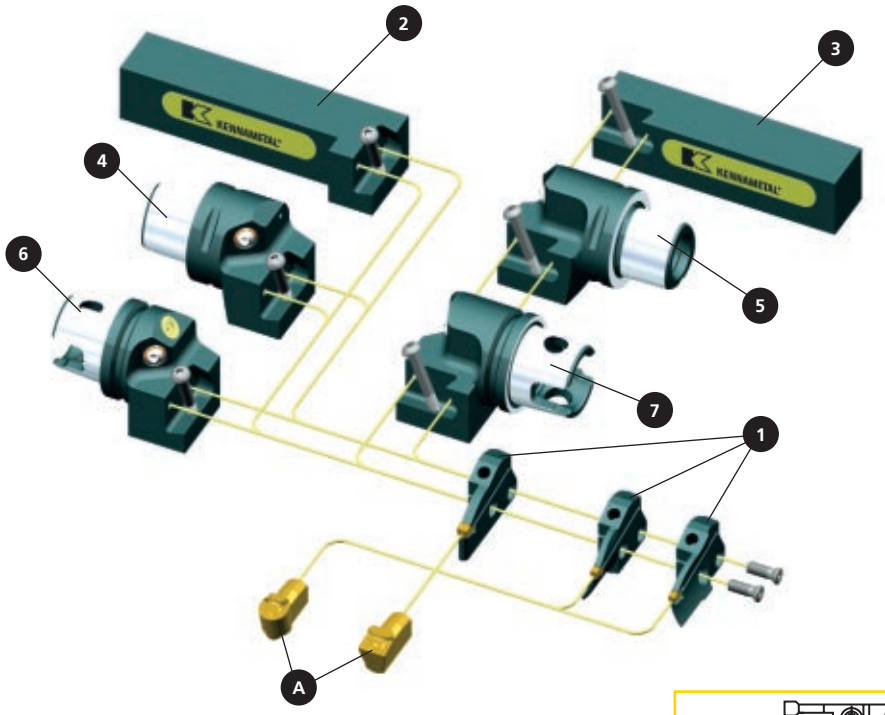
Steel shank with
through coolant

Seat Size	CD	Catalog number Right hand/Left hand	Wmin	Dmin	D	L1	F	A	Insert Screw	Torx
3	.200	**A16RA3ES R/L 0305N**	.087	1.260	1.000	8.00	.723	.280	**MS1571**	T20
3	.200	**A20SA3ES R/L 0305N**	.087	1.772	1.250	10.00	.861	.390	**MS1571**	T20
4	.315	**A16RA3ES R/L 0408N**	.118	1.575	1.000	8.00	.802	.280	**MS1571**	T20
4	.315	**A20SA3ES R/L 0408N**	.118	1.890	1.250	10.00	.979	.390	**MS1571**	T20
4	.315	**A24TA3ES R/L 0408N**	.118	2.205	1.500	12.00	1.097	.390	**MS1571**	T20
5	.390	**A20SA3ES R/L 0510N**	.157	1.772	1.250	10.00	1.019	.390	**MS1162**	T25
5	.390	**A24TA3ES R/L 0510N**	.157	2.362	1.500	12.00	1.176	.390	**MS1162**	T25
6	.470	**A20SA3ES R/L 0612N**	.197	1.772	1.250	10.00	1.097	.390	**MS1162**	T25
6	.470	**A24TA3ES R/L 0612N**	.197	2.520	1.500	12.00	1.255	.390	**MS1162**	T25
8	.590	**A24TA3ES R/L 0815N**	.236	2.756	1.500	12.00	1.373	.390	**MS1163**	T30

Order example:
Right hand: **A16RA3ESR0305N** 
Left hand: **A16RA3ESL0305N**

A3 Modular Blades Identification System

Modular Grooving Shank and Quick-Change Tooling



Legend		page
A	A2/A3 Inserts	B67 - B69
1	OD and Face Grooving Blades	B77 - B78
2	KGME Toolholder	B79
3	KGMS Toolholder	B79
4	Capto KGME Cutting Unit	B82
5	Capto KGMS Cutting Unit	B82
6	KM KGME Cutting Unit	B81
7	KM KGMS Cutting Unit	B81

By customer demand, Kennametal Inc. and Sandvik Coromant have entered into an agreement that allows both companies to manufacture, market, and sell KM and Coromant Capto products worldwide. Using the trademark Kennametal Capto, we make available a variety of leading and innovative Kennametal tooling designs utilizing the Coromant Capto coupling.

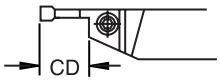
The manufacture and marketing of Kennametal Capto products and the use of the "Capto" trademark are in accordance with a license granted from Sandvik.

1. A3 Modular Grooving System	2. Blade Size	3. Hand of Tool	4. Seat Size	5. Grooving Depth in mm	6. Tool Style	7. Face Grooving Diameter Range
A3M	50	R	4	26	M	

4. Seat Size

Pocket Seat Size	Cutting Width (mm)
03/3S	3,05
04/4S	4,05
05	5,05
06	6,05

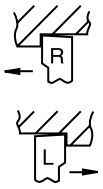
5. Grooving Depth in mm



conversions:

mm		inch
12 mm	=	.47
16 mm	=	.63
20 mm	=	.79
26 mm	=	1.02
32 mm	=	1.26

3. Hand of Tool



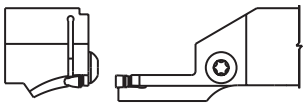
6. Tool Style

S = standard support for a range of groove widths and straight clearance for unlimited workpiece diameters

M = maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

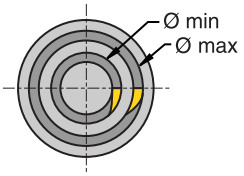
A = inboard sweep face grooving toolholder

B = outboard sweep face grooving toolholder

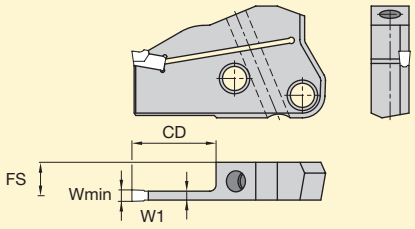


7. Face Grooving Diameter Range

Ø min – Ø max

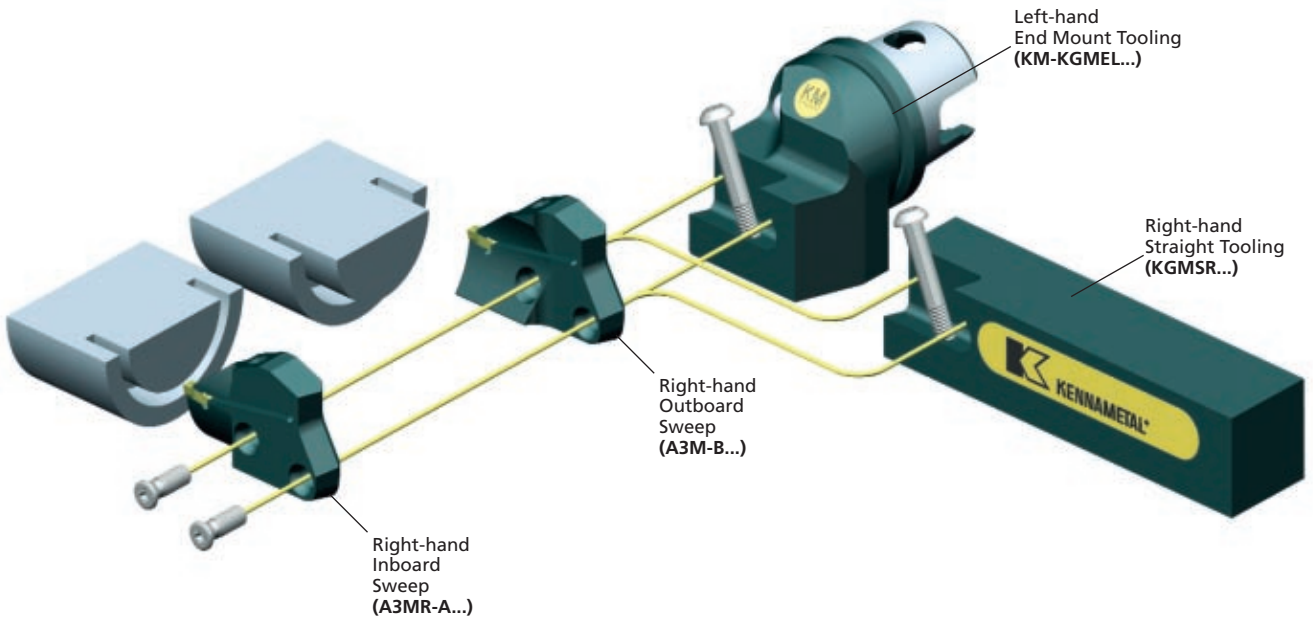


A3M-M

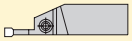


Seat Size	CD	Catalog number Right hand/Left hand	Wmin	FS	W1	Blade Size
3+4	.47	**A3M50 R/L 312M**	.118	.413	.090	50
3+4	.63	**A3M50 R/L 316M**	.118	.413	.090	50
3+4	1.02	**A3M50 R/L 326M**	.118	.413	.090	50
4	.47	**A3M50 R/L 412M**	.157	.394	.129	50
4	.63	**A3M50 R/L 416M**	.157	.394	.129	50
4	1.02	**A3M50 R/L 426M**	.157	.394	.129	50
4	1.26	**A3M50 R/L 432M**	.157	.394	.129	50
5+6	.63	**A3M50 R/L 516M**	.187	.374	.169	50
5+6	1.02	**A3M50 R/L 526M**	.187	.374	.169	50
5+6	1.26	**A3M50 R/L 532M**	.187	.374	.169	50
6	.63	**A3M50 R/L 616M**	.236	.354	.208	50
6	1.02	**A3M50 R/L 626M**	.236	.354	.208	50
6	1.26	**A3M50 R/L 632M**	.236	.354	.208	50

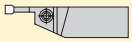
NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.



Order example:
Right hand: **A3M50R312M**



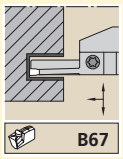
Left hand: **A3M50L312M**

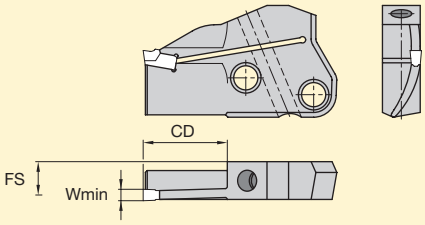


A3 Deep Grooving Modular Blades

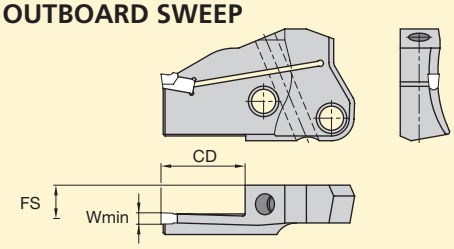
Face Grooving

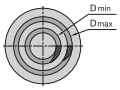
A3M-A INBOARD SWEEP



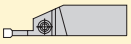


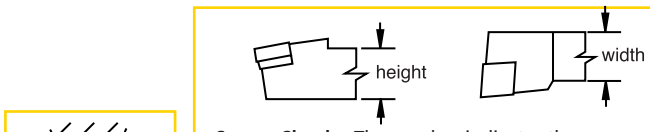
A3M-B OUTBOARD SWEEP



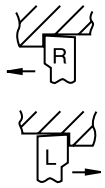


Seat Size	Dmin	Dmax	Catalog number Right hand/Left hand	Wmin	CD	FS	Blade Size
3S	.984	1.181	**A3M50 R/L 312A025030**	.118	.47	.394	50
3S	1.181	1.378	**A3M50 R/L 312A030035**	.118	.47	.394	50
3S	1.378	1.575	**A3M50 R/L 316A035040**	.118	.63	.394	50
3S	1.575	1.969	**A3M50 R/L 316A040050**	.118	.63	.394	50
3S	1.969	2.362	**A3M50 R/L 316A050060**	.118	.63	.394	50
4S	.984	1.181	**A3M50 R/L 412A025030**	.157	.47	.394	50
4S	1.181	1.378	**A3M50 R/L 412A030035**	.157	.47	.394	50
4S	1.378	1.575	**A3M50 R/L 420A035040**	.157	.79	.394	50
4S	1.575	1.969	**A3M50 R/L 420A040050**	.157	.79	.394	50
4S	1.969	2.362	**A3M50 R/L 420A050060**	.157	.79	.394	50
4	2.362	2.953	**A3M50 R/L 426A060075**	.157	1.02	.394	50
4	2.953	3.937	**A3M50 R/L 426A075100**	.157	1.02	.394	50
4	3.937	7.087	**A3M50 R/L 426A100180**	.157	1.02	.394	50
4	7.087	9.843	**A3M50 R/L 426A180250**	.157	1.02	.394	50
4	9.843	13.780	**A3M50 R/L 426A250350**	.157	1.02	.394	50
4	13.780	-	**A3M50 R/L 426A350999**	.157	1.02	.394	50
5+6	2.362	2.953	**A3M50 R/L 526A060075**	.197	1.02	.374	50
5+6	2.953	3.937	**A3M50 R/L 532A075100**	.197	1.26	.374	50
5+6	3.937	7.087	**A3M50 R/L 532A100180**	.197	1.26	.374	50
5+6	7.087	9.843	**A3M50 R/L 532A180250**	.197	1.26	.374	50
5+6	9.843	13.780	**A3M50 R/L 532A250350**	.197	1.26	.374	50
5+6	13.780	-	**A3M50 R/L 532A350999**	.197	1.26	.374	50
3S	.984	1.181	**A3M50 R/L 312B025030**	.118	.47	.394	50
3S	1.181	1.378	**A3M50 R/L 312B030035**	.118	.47	.394	50
3S	1.378	1.575	**A3M50 R/L 316B035040**	.118	.63	.394	50
3S	1.575	1.969	**A3M50 R/L 316B040050**	.118	.63	.394	50
3S	1.969	2.362	**A3M50 R/L 316B050060**	.118	.63	.394	50
4S	.984	1.181	**A3M50 R/L 412B025030**	.157	.47	.394	50
4S	1.181	1.378	**A3M50 R/L 412B030035**	.157	.47	.394	50
4S	1.378	1.575	**A3M50 R/L 420B035040**	.157	.79	.394	50
4S	1.575	1.969	**A3M50 R/L 420B040050**	.157	.79	.394	50
4S	1.969	2.362	**A3M50 R/L 420B050060**	.157	.79	.394	50
4	2.362	2.953	**A3M50 R/L 426B060075**	.157	1.02	.394	50
4	2.953	3.937	**A3M50 R/L 426B075100**	.157	1.02	.394	50
4	3.937	7.087	**A3M50 R/L 426B100180**	.157	1.02	.394	50
4	7.087	9.843	**A3M50 R/L 426B180250**	.157	1.02	.394	50
4	9.843	13.780	**A3M50 R/L 426B250350**	.157	1.02	.394	50
4	13.780	-	**A3M50 R/L 426B350999**	.157	1.02	.394	50
5+6	2.362	2.953	**A3M50 R/L 526B060075**	.197	1.02	.374	50
5+6	2.953	3.937	**A3M50 R/L 532B075100**	.197	1.26	.374	50
5+6	3.937	7.087	**A3M50 R/L 532B100180**	.197	1.26	.374	50
5+6	7.087	9.843	**A3M50 R/L 532B180250**	.197	1.26	.374	50
5+6	9.843	13.780	**A3M50 R/L 532B250350**	.197	1.26	.374	50
5+6	13.780	-	**A3M50 R/L 532B350999**	.197	1.26	.374	50

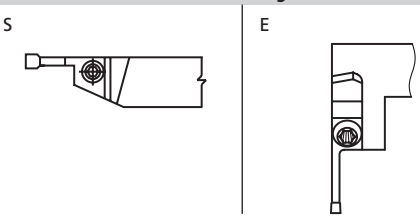
Order example:
Right hand: **A3M50R312A025030**  Left hand: **A3M50L312A025030**



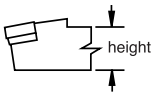
Square Shanks: The number indicates the toolholder cross section in 1/16-inch increments.
Rectangular Shanks: The first digit indicates the number of eighth-inch increments of width and the second digit indicates the number of quarter-inch increments of height.



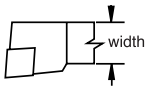
	1. Kennametal Grooving Modular	2. Tool Style	3. Hand of Tool	4. Shank Dimensions	5. Blade Size	6. Tool Units (N = inch)	7. Blade Size
INCH	KGM	S	R	16	50	N	
METRIC				25	25	M	50



4. Shank Height — shank height in millimeters



5. Shank Width — shank width in millimeters

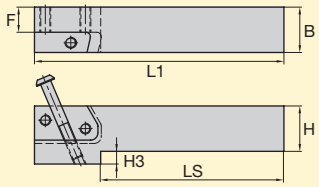


6. Tool Length — length over insert in a support blade with a 12,5 mm D dimension according to ISO

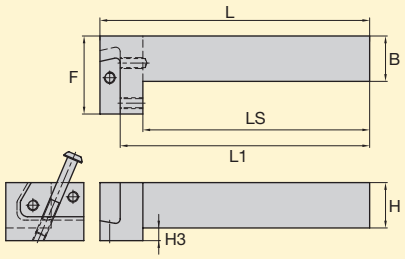
M = 150 mm
P = 170 mm

A3 Deep Grooving Modular Toolholder

KGMS..

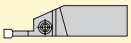
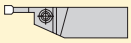


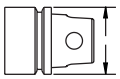
KGME..



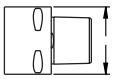
Catalog number Right hand/Left hand	H	B	L1	LS	F	H3	Blade screw (2 req'd)	Clamp Screw	Torx
KGMS R/L 1650	1.00	1.00	5.5	4.26	.56	.25	**MS1162**	**MS2002**	T25
KGMS R/L 2050	1.25	1.25	5.5	-	.81	-	**MS1162**	**MS2002**	T25
KGMS R/L 2450	1.50	1.50	5.5	-	1.06	-	**MS1162**	**MS2002**	T25
KGME R/L 1650	1.00	1.00	5.5	4.96	1.7	.25	**MS1162**	**MS2002**	T25
KGME R/L 2050	1.25	1.25	5.5	4.96	1.7	-	**MS1162**	**MS2002**	T25
KGME R/L 2450	1.50	1.50	5.5	4.96	1.7	-	**MS1162**	**MS2002**	T25

Note: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 71-88 In.-lbs. (8-10 Nm)
See Modular Blade assembly diagrams on page B83

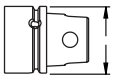
Order example:
Right hand: **KGMSR1650** 
Left hand: **KGMSL1650** 



KM size
KM40 = 40 mm dia.
KM50 = 50 mm dia.
KM63 = 63 mm dia



Kennametal Capto size
C4 = 40 mm dia.
C5 = 50 mm dia.
C6 = 63 mm dia.



KMXMZ size
KM63XMZ = 63 mm dia.

1. System & Size

KM40

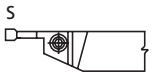
2. Kennametal Grooving Modular

KGM

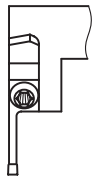
3. Tool Style

S

S



E



4. Hand of Tool

R

5. Blade Size

50

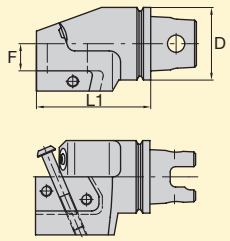
6. Special Conditions

Y =
Mazak Integrex
Y-series machines

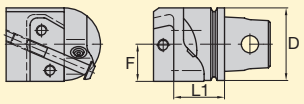
(KM-KGMSR...)

(KM-KGMEL...)

KM-KGMS..

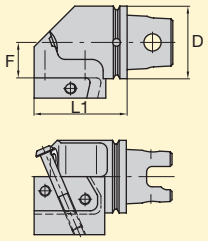


KM-KGME..



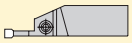
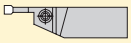
Catalog number Right hand/Left hand	D	L1	F	Blade Screw (2 req'd)	Clamp Screw	Torx
KM40KGMS R/L 50	1.00	2.10	.59	**MS1162**	**MS2002**	T25
KM50KGMS R/L 50	1.25	2.30	.90	**MS1162**	**MS2002**	T25
KM63UTKGMS R/L 50	1.50	2.50	1.22	**MS1162**	**MS2002**	T25
KM40KGME R/L 50	1.57	1.10	0.80	**MS1162**	**MS2002**	T25
KM50KGME R/L 50	1.96	1.49	1.00	**MS1162**	**MS2002**	T25
KM63KGME R/L 50	2.48	1.89	1.28	**MS1162**	**MS2002**	T25
KM80ATCKKGME R/L 50	3.15	2.28	1.59	**MS1162**	**MS2002**	T25

KM-XMZKGMS..



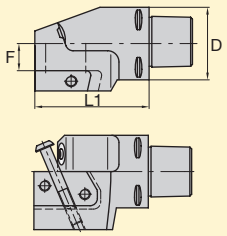
Catalog number Right hand/Left hand	D	L1	F	Blade Screw (2 req'd)	Clamp Screw	Torx
KM63XMZKGMS R/LF 50Y	2.48	2.5	1.22	**MS1162**	**MS2002**	T25

Note: .KGMS..: Right-hand holder uses right-hand blades.
.KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 71-88 in.-lbs. (8-10 Nm)
See Modular Blade assembly diagrams on page B83

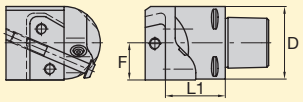
Order example:
Right hand: **KM40KGMSR50** 
Left hand: **KM40KGMSL50** 

A3 Deep Grooving Modular Capto Cutting Units

C-KGMS..

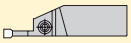
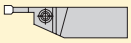


C-KGME..

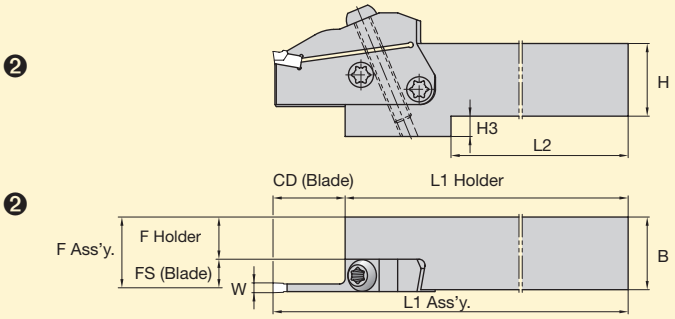


Catalog number Right hand/Left hand	D	L1	F	Blade Screw (2 req'd)	Clamp Screw	Torx
C4KGMS R/L 50	1.57	1.30	0.81	**MS1162**	**MS2002**	T25
C5KGMS R/L 50	1.97	1.69	1.00	**MS1162**	**MS2002**	T25
C6KGMS R/L 50	2.48	1.89	1.28	**MS1162**	**MS2002**	T25
C4KGME R/L 50	1.57	2.50	0.39	**MS1162**	**MS2002**	T25
C5KGME R/L 50	1.97	2.50	0.59	**MS1162**	**MS2002**	T25
C6KGME R/L 50	2.48	2.58	0.87	**MS1162**	**MS2002**	T25

Note: .KGMS..: Right-hand holder uses right-hand blades.
.KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 71-88 in.-lbs. (8-10 Nm)
See Modular Blade assembly diagrams on page B83

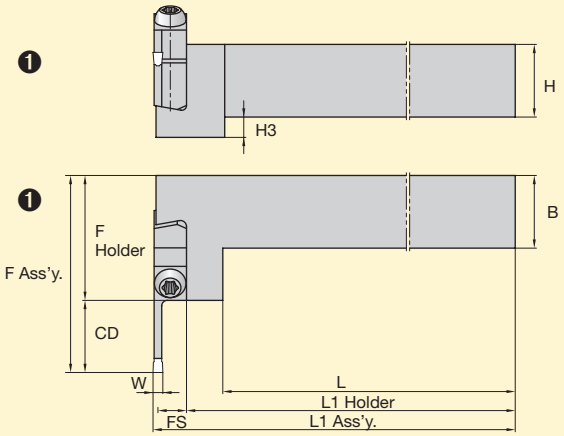
Order example:
Right hand: **C4KGMSR50** 
Left hand: **C4KGMSL50** 

KGMS Toolholder with Modular Blade Assemblies



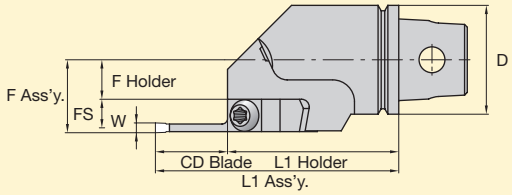
❷ F Ass'y. = F (Holder) + FS (Blade) + W/2
L1 Ass'y. = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



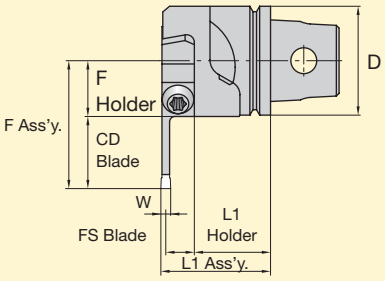
❶ F Ass'y. = F (Holder) + CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



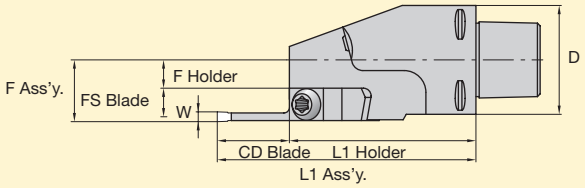
F Ass'y. = F (Holder) + FS (Blade) + W/2
L1 (Ass'y.) = L1 (Holder) + CD (Blade)

KM-KGME



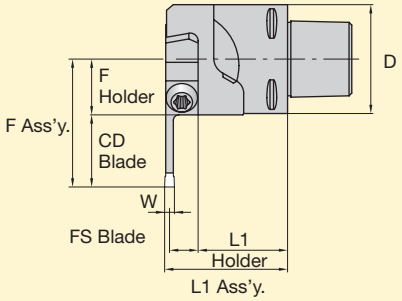
F Ass'y. = F (Holder) + CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Ass'y. = F (Holder) + FS (Blade) + W2
L1 Ass'y. = L1 (Holder) + CD (Blade)

C-KGME

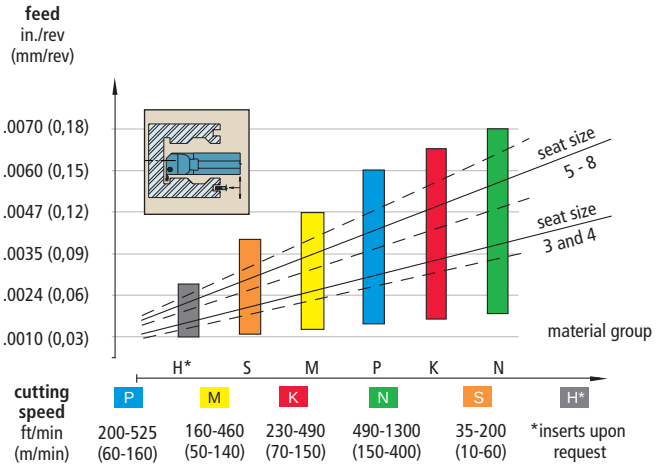


F Ass'y. = F (Holder) +CD (Blade)
L1 (Ass'y.) = L1 (Holder) + FS (Blade) + W/2

A3 Deep Grooving – Technical Data

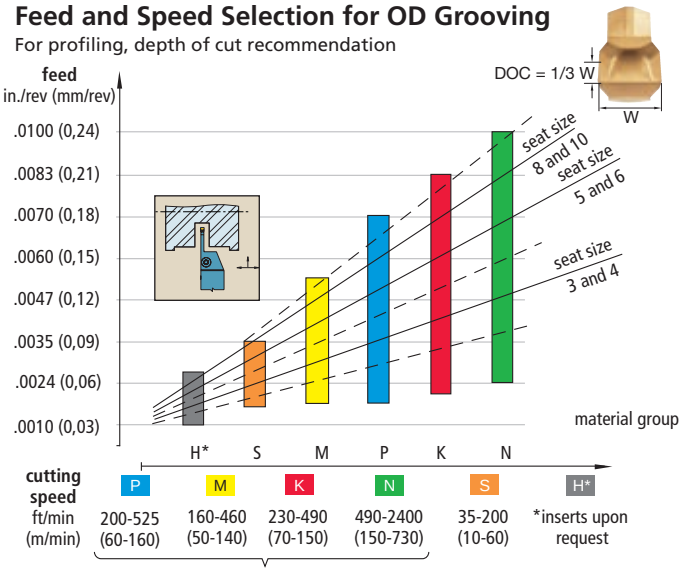
Application Guidelines

Feed and Speed Selection for ID and Face Grooving



Feed and Speed Selection for OD Grooving

For profiling, depth of cut recommendation

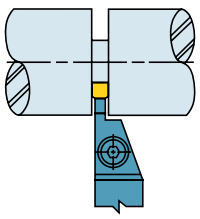


For radial grooving under stable conditions, feed can be increased by up to 50%.

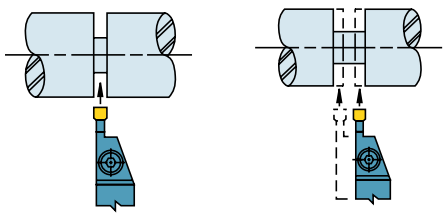
Tool Application Guidelines

- Always use good general machining practices.
- Make the machine and workpiece setup as rigid as possible.
- Integral shank toolholders offer the best rigidity. They should be your first toolholder choice, when possible.
- Use the toolholder with the shortest possible depth-of-cut for the application ("CD" dimension).
- When changing inserts, make sure the new insert locates securely against the toolholder's positive stop.
- Never tighten the clamping screw without an insert in the pocket.
- Toolholder projection out of the tool block should be as short as possible.
- Inserts should cut as close to center as possible.
- Dwell time in bottom of groove should be less than three revolutions.
- Recommended cutting speeds and feeds are a starting point. Adjust, as necessary, for optimum tool life and chip control.

Deep Grooves

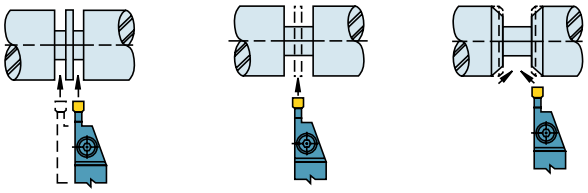


Deep Grooves Slightly Wider than the Tool



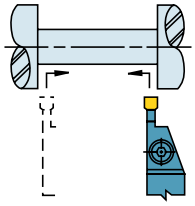
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

Extra Wide Deep Grooves



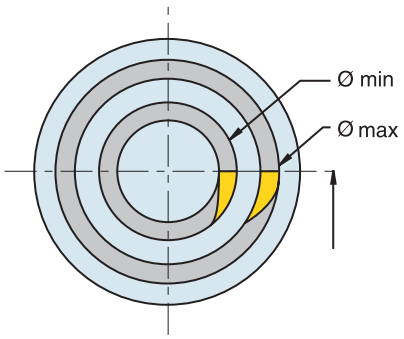
1. Plunge out both sides of the groove width.
2. Plunge center area to remove web of material remaining.
3. Plunge both sides of groove at the required angle, using approximately one-half the width of the grooving tool for maximum width of cut.

Finish Turning of the Groove / Light Profiling



1. Follow recommendations explained above.
2. To avoid insert chipping and to achieve groove wall perpendicularity, follow the tool path shown here.
3. Use the lightest depth of cut possible while still maintaining good chip breaking, tool life, and surface finish.

Face Grooving Application Guidelines



Tool Selection

- When selecting the toolholder, always start at the largest diameter possible and work toward the smaller diameter. This will allow the strongest tool to be used.

Cutting the First Groove

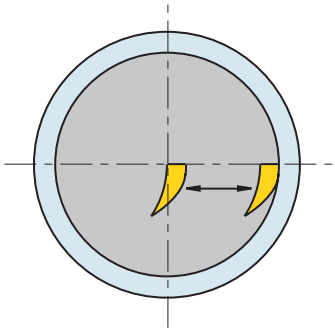
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

Chip Control

- Adjust speed and feed for good chip control and evacuation from the groove. Chip compaction can cause poor surface finish, tool breakage, and reduced tool life.

Tool Setting

- The tool should be set as close to the center as possible to avoid extreme formation of burrs.
- Align the cutting edge square to the workpiece.



Widening a Face Groove

- After the first groove has been cut, the groove width can be widened in either direction using the same tool. The best practice is to work from the OD to the ID.

Practical Solutions to Grooving Problems

Problem	Remedy
Burr	1. Varify tool center height. 2. Use sharp tool (index more often). 3. Use positive rake PVD coated insert. 4. Use correct grade for workpiece material. 5. Use correct geometry (e.g. positive rake for workhardening material). 6. Change tool path.
Poor surface finish	1. Increase speed. 2. Use sharp tool (index more often). 3. Dwell time in bottom 1-3 revolutions (max). 4. Use proper chip control geometry. 5. Increase coolant flow. 6. Varify proper setup (overhang, shank size). 7. Use correct geometry (e.g. positive rake for workhardening material).
Groove bottom not flat	1. Use sharp tool (index more often). 2. Dwell time in bottom 1-3 revolutions (max). 3. Reduce tool overhang (increase rigidity). 4. Reduce feed rate at groove bottom. 5. Use a wider insert. 6. Varify tool center height.
Poor chip control	1. Use sharp tool (index more often). 2. Increase coolant concentration. 3. Adjust feed rate (usually increase first).
Chatter	1. Reduce tool and workpiece overhang. 2. Adjust speed (usually increase first). 3. Adjust feed (usually increase first). 4. Varify tool center height.
Insert chipping	1. Use correct grade for workpiece material. 2. Increase speed. 3. Reduce feed. 4. Use a stronger grade. 5. Increase tool and setup rigidity.
Built-up edge	1. Use positive rake PVD coated insert. 2. Increase speed. 3. Reduce feed. 4. Increase coolant flow/concentration. 5. Use cermets.
Side walls not straight	1. Check tool alignment for square. 2. Reduce workpiece and tool overhang. 3. Use sharp insert (index more often).

Engineering Your Competitive Edge®

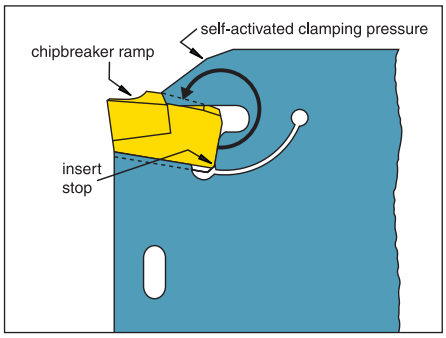
KENNAMETAL®

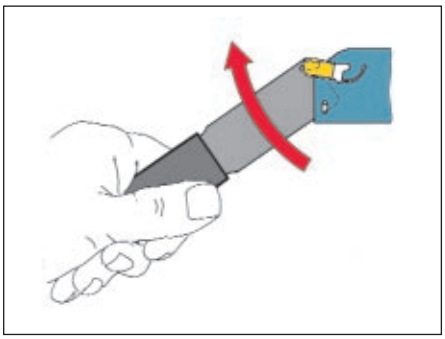
A2 Cut-Off ...

... high-performance tools to maximize productivity!

Innovative A2 Insert Design

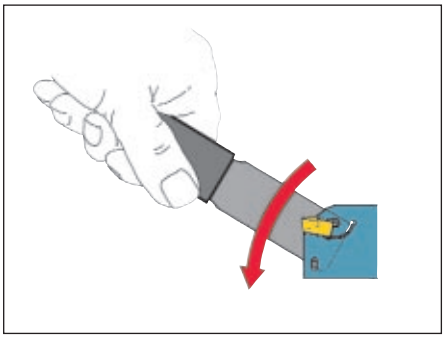
- V-prisms on both top and bottom enable higher clamping force to prevent insert movement, even when cutting at high feed rates.
- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Positive rake cutting action combined with Kennametal's high-performance PVD coatings result in superior tool life and chip control.





Patented A2 Insert Stop Design

- As cutting forces increase, clamping forces also increase for secure holding power.
- Fixed insert stop ensures solid seating with every index and delivers up to 30% longer life.
- Cutting height is accurately controlled for maximum reliability and performance on even small-diameter parts.



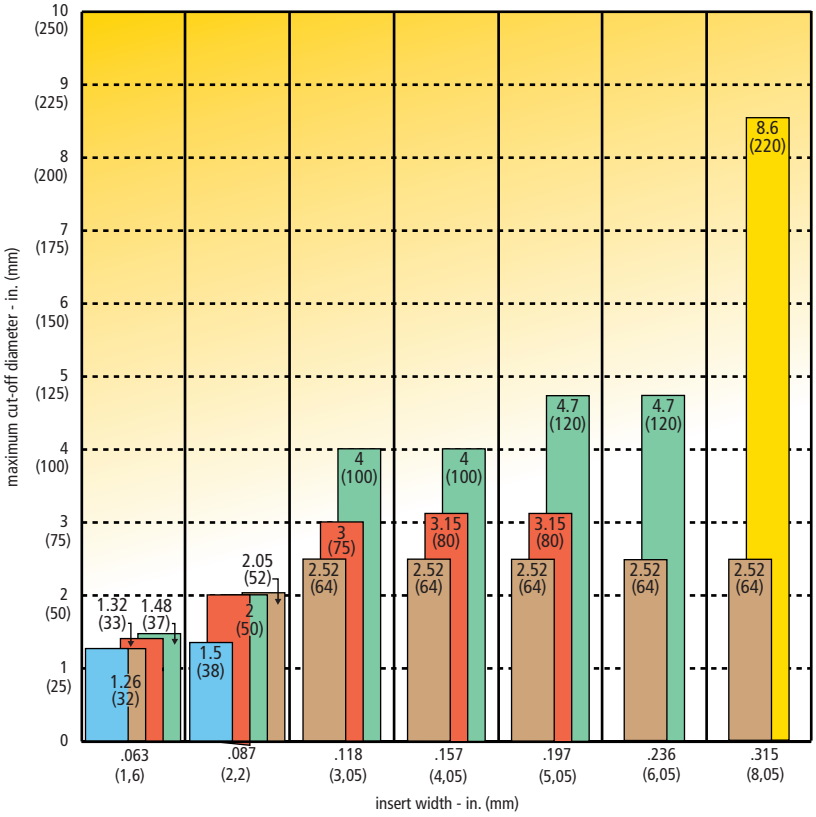
Quick and Easy Insert Indexing

- A convenient indexing wrench is available to minimize downtime by enabling fast removal and insertion without damage to the cutting edge.

KENNA PERFECT – A2 Cut-Off

5 Easy Steps to Maximize Cut-Off Productivity

1st Step – Select Insert Width and Holder Type



What you need to know:

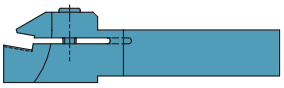
- Cut-off diameter
- part/machine requirements

For required cut-off diameter, select insert width and holder type based on the part and machine requirement:

- To maximize rigidity, select the largest possible blade height or an integral shank toolholder.
- Diameters shown are for cut-off to center. Maximum cut-off depth to a through-hole is one half of the diameter.
- To determine capability for cut-off to a through-hole on integral shank or reinforced blades, please refer to listing for that tool in this catalog.

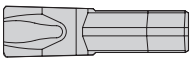
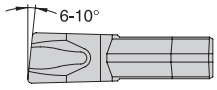
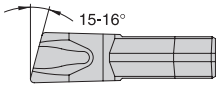
blade height
19 mm
26 mm
32 mm
52 mm
Integral Shank Toolholders

Toolholder Type

Blade: (self-clamping)	**Blade: (self-clamping, reinforced version)**	**Toolholder: (with clamping screw)**
	(Available in 26 mm and 32 mm heights)	
• frequently used tool • two insert seats • deepest depth of cut capability	• efficient tooling solution with improved stability • limited depth of cut capability	• shank tool with the highest stability • limited depth of cut • single insert seat

2nd Step – Select Insert Lead Angle

- part type
- burr and center stub considerations
- Cut-off to center or through-hole

	Neutral (0°)	**Right/Left 6° - 10°**	**Right/Left 15° - 16°**
Insert type			
Recommended Application	• for cutting off solid workpieces • center stub will form on cut-off part • eliminates lateral deflection • best for deep cut-off depths	• for cutting off solid workpieces with reduced formation of center stub • for cut-off to a through-hole with reduced burr	• for thin-walled workpieces • for cutting off small diameter workpieces with minimal burr or center stub
Tool life	best tool life	better tool life	good tool life

3rd Step – Select Chipbreaker Style and Feed Rate

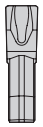
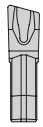
- lead angle or neutral insert
- workpiece material

- cut-off insert with precision ground cutting edge for low feeds
- curved cutting edge

- cut-off insert with precision molded cutting edge for medium feeds
- stabilized straight cutting edge

- cut-off insert with precision molded cutting edge for higher feed rates
- curved cutting edge

Chipbreaker Style and Feed Rates - in/rev (mm/rev)

Insert Type	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
	**N-CR** .003 – .012 (0,08 – 0,3)	**N-CF** .002 – .005 (0,05 – 0,12)	**N-CM** .002 – .008 (0,05 – 0,2)	**N-CF** .002 – .007 (0,05 – 0,18)	**N-CF** .002 – .004 (0,04 – 0,10)	**CBN available upon request**
	N-CF .002 – .006 (0,05 – 0,15)					
	**R/L-CR** .002 – .005 (0,05 – 0,12)	**R/L-CF** .002 – .003 (0,04 – 0,08)	**R/L-CM** .002 – .005 (0,05 – 0,12)	**R/L-CF** .002 – .004 (0,04 – 0,10)	**R/L-CF** .002 – .003 (0,04 – 0,08)	**CBN available upon request**
	R/L-CF .002 – .003 (0,04 – 0,08)					

4th Step – Select Grade and Speed

Recommendations for Grade and Speed Selection – sfm (m/min)

	Machining Condition	Workpiece Material: Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys	Hardened Materials
KENNA PERFECT	high performance optimum conditions, higher speeds	**KT315** 395 - 625 (120 -190)	**KT315** 230 - 560 (70 - 170)	**KC5025** 265 - 560 (80 - 170)	**KT315** 600 - 1300 (180 - 400)	**KC5025** 100 - 325 (30 - 100)	–
KENNA PERFECT	first choice for general machining conditions	**KC5025** 265 - 560 (80 - 170)	**KC5025** 265 - 500 (80 - 150)	**KC5025** 230 - 500 (70 - 150)	**KC5025** 500 - 980 (150 - 300)	**KC5025** 80 - 250 (25 - 75)	**KB5625*** 265 - 400 (80 - 120)
KENNA PERFECT	unfavorable conditions interrupted cuts, low speeds	**KC5025** 200 - 325 (60 - 100)	**KMF** 135 - 265 (40 - 80)	**KMF** 80 - 265 (25 - 80)	**KMF** 200 - 600 (60 - 180)	**KMF** 30 - 80 (30 - 25)	–
KENNA UNIVERSAL		**KU25T** 210 - 450 (65 - 135)	**KU25T** 210 - 400 (65 - 120)	**KU25T** 180 - 400 (55 - 120)	**KU25T** 400 - 785 (120 - 240)	**KU25T** 65 - 200 (20 - 60)	–

*PCBN tipped inserts in KB5625 are available on request

5th Step – Select Insert and Holder from Catalog Page

Note: The insert seat size must match the seat size of your holder selection.

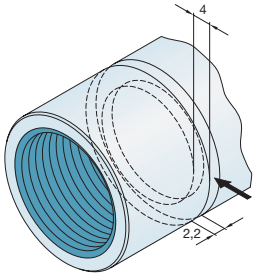
Example for A2 – Cut-off

material: low carbon steel
workpiece dia.: 1.02 in. (27 mm)
depth of cut: .157 in. (4 mm)

Recommendation:

insert: A2022R10CF00
grade: KC5025
cutting width: .087 in. (2,2 mm)
insert seat size: 2

toolholder: A2BNSN3202
seat size: 2



Congratulations!
You have successfully maximized cut-off productivity by selecting the best insert, toolholder, grade and cutting specifications for your application!

speed: 460 sfm (140 m/min)
feed: .002 ipr (0,05 mm)

A2 Insert Identification System

Cut-Off

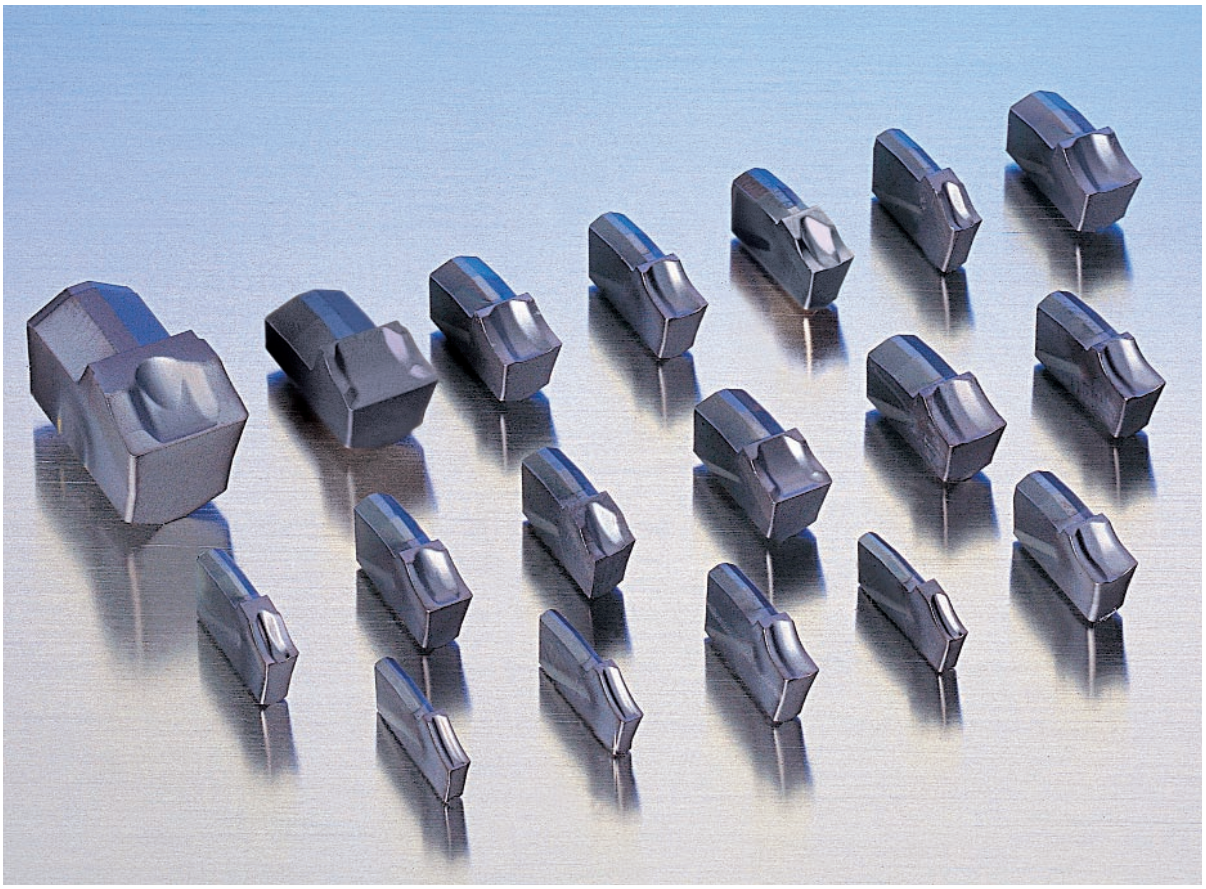
A2 Cut-off	N = neutral R = right hand L = left hand	-CF (**Cut-off F**ine) -CM (**Cut-off M**edium) -CR (**Cut-off R**ough)
1. Insert Type	**3. Hand of Insert**	**5. Chipbreaker**
A2 **040**	**N** **00**	**CF** **02**
2. Cutting Width	**4. Approach Angle of Main Cutting Edge**	**6. Corner Radius**

(in 1/10 mm)

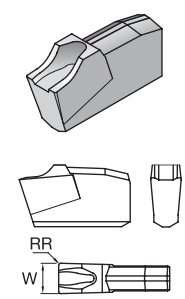
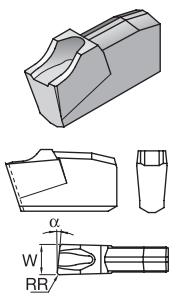
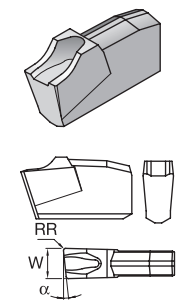
Cutting Width (mm)	Pocket Seat Size
1,60	01
2,20	02
3,05	03
4,05	04
5,05	05
6,05	06
8,05	08

00 = neutral
06 = 6°
10 = 10°
15 = 15°
16 = 16°

	mm	inch
00	0,0	.000
01	0,1	.004
02	0,2	.008
03	0,3	.010
04	0,4	.016



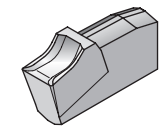
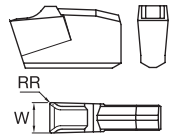
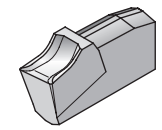
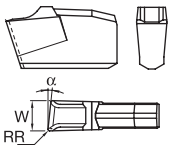
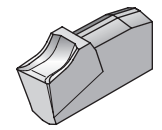
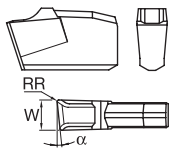
With more than 110 insert line items in three grades and three chipbreaker styles, Kennametal offers a complete line of inserts designed to productively handle any cut-off application.

	Seat Size	W inch	W mm	Catalog number	Dimensions α°	RR inch	RR mm	KENNA PERFECT P KT315	P KC5025	M KT315	M KC5025	K KC5025	K KMF	N KC5025	S KMF	S KC5025	KENNA UNIVERSAL KU25T
A2-N-CF				**Neutral**													
	1	.063	1,60	**A2016N00CF01**	-	.004	0,15	●	●	●	●	●	●	●	●	●	●
	2	.087	2,20	**A2022N00CF02**	-	.008	0,20	●	●	●	●	●	●	●	●	●	●
	3	.118	3,05	**A2030N00CF02**	-	.008	0,20	●	●	●	●	●	●	●	●	●	●
	4	.159	4,05	**A2040N00CF02**	-	.008	0,20	●	●	●	●	●	●	●	●	●	●
	5	.199	5,05	**A2050N00CF03**	-	.012	0,30		●		●	●	●	●	●	●	
A2-L-CF				**Left hand**													
	1	.063	1,60	**A2016L06CF00**	6	.000	0,00	●	●	●	●	●	●	●	●	●	
	1	.063	1,60	**A2016L10CF00**	10	.000	0,00		●		●	●		●		●	
	1	.063	1,60	**A2016L16CF00**	16	.000	0,00		●		●	●		●		●	
	2	.087	2,20	**A2022L06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	
	2	.087	2,20	**A2022L10CF00**	10	.000	0,00		●		●	●		●		●	
	2	.087	2,20	**A2022L16CF00**	16	.000	0,00		●		●	●		●		●	
	3	.120	3,05	**A2030L06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	●
	3	.120	3,05	**A2030L10CF00**	10	.000	0,00		●		●	●		●		●	●
	3	.120	3,05	**A2030L15CF00**	15	.000	0,00		●		●	●		●		●	●
	4	.159	4,05	**A2040L06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	●
	5	.199	5,05	**A2050L06CF03**	6	.012	0,30		●		●	●		●		●	
A2-R-CF				**Right hand**													
	1	.063	1,60	**A2016R06CF00**	6	.000	0,00	●	●	●	●	●	●	●	●	●	
	1	.063	1,60	**A2016R10CF00**	10	.000	0,00		●		●	●		●		●	
	1	.063	1,60	**A2016R16CF00**	16	.000	0,00		●		●	●		●		●	●
	2	.087	2,20	**A2022R06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	●
	2	.087	2,20	**A2022R10CF00**	10	.000	0,00		●		●	●		●		●	●
	2	.087	2,20	**A2022R16CF00**	16	.000	0,00		●		●	●		●		●	●
	3	.120	3,05	**A2030R06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	●
	3	.120	3,05	**A2030R10CF00**	10	.000	0,00		●		●	●		●		●	●
	3	.120	3,05	**A2030R15CF00**	15	.000	0,00		●		●	●		●		●	●
	4	.159	4,05	**A2040R06CF02**	6	.008	0,20	●	●	●	●	●	●	●	●	●	●
	5	.199	5,05	**A2050R06CF03**	6	.012	0,30		●		●	●		●		●	

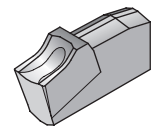
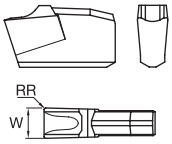
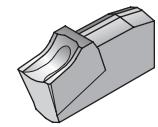
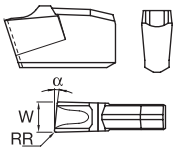
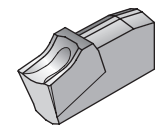
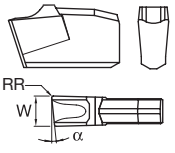
Order example:
Catalog number: A2016N00CF01
Insert grade: KT315

A2 Cut-Off Inserts

CM-Chipbreaker

	Seat Size	W inch	W mm	Catalog number	Dimensions α°	RR inch	RR mm	KENNA PERFECT P KT315	P KC5025	M KT315	M KC5025	K KC5025	N KMF	N KC5025	S KMF	S KC5025	KENNA UNIVERSAL KU25T
A2-N-CM				**Neutral**													
	1	.063	1,60	**A2016N00CM01**	-	.004	0,10	●	●	●	●	●		●		●	●
	2	.087	2,20	**A2022N00CM02**	-	.008	0,20		●		●	●		●		●	●
	3	.120	3,05	**A2030N00CM02**	-	.008	0,20		●		●	●		●		●	●
	4	.159	4,05	**A2040N00CM02**	-	.008	0,20		●		●	●		●		●	●
	5	.199	5,05	**A2050N00CM03**	-	.012	0,30		●		●	●		●		●	
	6	.238	6,05	**A2060N00CM03**	-	.012	0,30		●		●	●		●		●	
	8	.317	8,05	**A2080N00CM04**	-	.016	0,40		●		●	●		●		●	
A2-L-CM				**Left hand**													
	1	.063	1,60	**A2016L06CM00**	6	.000	0,00	●	●	●	●	●		●		●	
	1	.063	1,60	**A2016L16CM00**	16	.000	0,00		●		●	●		●		●	
	2	.087	2,20	**A2022L06CM00**	6	.000	0,00		●		●	●		●		●	
	3	.120	3,05	**A2030L06CM01**	6	.004	0,10		●		●	●		●		●	
A2-R-CM				**Right hand**													
	1	.063	1,60	**A2016R06CM00**	6	.000	0,00	●	●	●	●	●		●		●	●
	1	.063	1,60	**A2016R16CM00**	16	-	-		●		●	●		●		●	
	2	.087	2,20	**A2022R06CM00**	6	.000	0,00		●		●	●		●		●	
	3	.120	3,05	**A2030R06CM01**	6	.004	0,10		●		●	●		●		●	

Order example:
Catalog number: A2016N00CM01
Insert grade: KT315

	Seat Size	W inch	W mm	Catalog number	Dimensions α°	RR inch	RR mm	KENNA PERFECT P KT315	P KC5025	M KT315	M KC5025	K KC5025	K KMF	N KC5025	S KMF	S KC5025	KENNA UNIVERSAL KU25T
A2-N-CR				**Neutral**													
	2	.087	2,20	**A2022N00CR02**	-	.008	0,20	●	●	●	●	●		●		●	●
	3	.120	3,05	**A2030N00CR02**	-	.008	0,20	●	●	●	●	●		●		●	●
	4	.159	4,05	**A2040N00CR02**	-	.008	0,20	●	●	●	●	●		●		●	●
	5	.199	5,05	**A2050N00CR03**	-	.012	0,30		●		●	●		●		●	
	6	.238	6,05	**A2060N00CR03**	-	.012	0,30		●		●	●		●		●	
	8	.317	8,05	**A2080N00CR04**	-	.016	0,40		●		●	●		●		●	
A2-L-CR				**Left hand**													
	2	.087	2,20	**A2022L06CR03**	6	.012	0,30		●		●	●		●		●	
	3	.120	3,05	**A2030L06CR03**	6	.012	0,30		●		●	●		●		●	
	4	.159	4,05	**A2040L06CR03**	6	.012	0,30		●		●	●		●		●	
	5	.199	5,05	**A2050L06CR04**	6	.016	0,40		●		●	●		●		●	
	6	.238	6,05	**A2060L06CR04**	6	.016	0,40		●		●	●		●		●	
A2-R-CR				**Right hand**													
	2	.087	2,20	**A2022R06CR03**	6	.012	0,30		●		●	●		●		●	
	3	.118	3,05	**A2030R06CR03**	6	.012	0,30		●		●	●		●		●	●
	4	.159	4,05	**A2040R06CR03**	6	.012	0,30		●		●	●		●		●	
	5	.199	5,05	**A2050R06CR04**	6	.016	0,40		●		●	●		●		●	
	6	.238	6,05	**A2060R06CR04**	6	.016	0,40		●		●	●		●		●	

Order example:
Catalog number: A2022N00CR02
Insert grade: KT315

A2 Holder Identification System

Cut-Off – Toolholders

	1. A3 Screw-Clamp Holder*	2. Tool Style	3. Support Type	4. Hand of Tool	5. Shank Size	6. Seat Size	7. Max. Cutting Depth
INCH	A3	S	C	R	16	03	26
METRIC	A3	S	C	R	2525M	03	26

*NOTE: A3 screw-clamp OD holders are also designed to hold A2 inserts (see Technical data, page 98)

2. Tool Style
S = Straight

3. Support Type
S = standard (straight clearance)
M = max. support (straight clearance)
C = reinforced max. support (circular clearance)

4. Hand of Tool
R = right
L = left

5. Shank Size
Inch sizes: for square shanks, the number indicates the height and width in 1/16-inch increments (rectangular: 2nd digit = height in 1/4-inch increments)
metric: height x width in mm, letter indicates tool length according to ISO (see table in tool block identification system)

6. Seat Size

Pocket Seat Size	Cutting Width (mm)
01	1,60
02	2,20
03	3,05
04	4,05
05	5,05
06	6,05
08	8,05

7. Max. Cutting Depth
in millimeters

Cut-Off – Blades

1. A2 Cut-Off Blade	2. Tool Style	3. Support Style	4. Hand of Tool	5. Blade Size	6. Overall Length	7. Seat Size	8. Max. Cutting Depth
A2	BN	C	R	32	J	02	21

2. Tool Style
BN = 2 pocket blade
BH = 1 pocket blade

3. Support Style
S = standard
C = reinforced

4. Hand of Tool
R = right
L = left
N = neutral

5. Blade Size
in (mm)
19 / 26 / 32 / 52

6. Overall Length
letter designation according to ISO (see table in tool block identification system)

J = 110 mm
M = 150 mm
X = Special

7. Seat Size
01 = 1,60 mm; 04 = 4,05 mm;
02 = 2,20 mm; 05 = 5,05 mm;
03 = 3,05 mm; 06 = 6,05 mm;
08 = 8,05 mm

8. Max. Cutting Depth
in (mm) (reinforced blade only)

Cut-Off – Tool Blocks

	1. A2 Cut-Off	2. Tool Block	3. Clamping Style	4. Hand of Tool	5. Shank Dimensions	6. Blade Size	7. Tool Length in (mm)	8. Blade Size
INCH	A2	T	E	N	16	32	J	32
METRIC	A2	T	E	N	25	23	J	32

3. Clamping Style
E = integral clamp
Z = removable clamp

4. Hand of Tool
R = right
L = left
N = neutral

5. Shank Dimensions
square shank: This number indicates the toolholder cross section in 1/16-inch increments.
rectangular shank: The first digit indicates the number of eighth-inch increments of width and the second digit indicates the number of quarter inches of height.

5. Shank Height
in millimeters

6. Blade Size
in millimeters

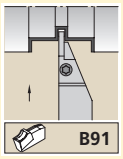
6. Shank Width
in millimeters

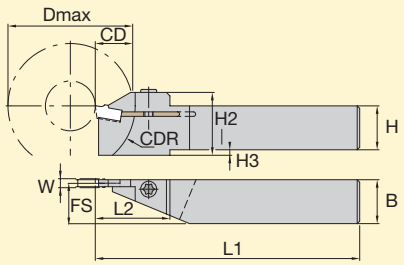
7. Tool Length in (mm)
J = 110
X = other length

8. Blade Size
in millimeters

NOTE: Torque recommendation for clamp screw see page E53

A3SC





Seat Size	CD	Catalog number Right hand/Left hand	W	Dmax	H	B	FS	L1	L2	H2	H3	CDR	Clamp Screw	Torx
1	.390	**A3SC R/L 050110**	.063	.79	.313	.313	.358	5.000	.790	.570	.160	.430	**191.916**	T15
1	.390	**A3SC R/L 060110**	.063	.79	.375	.375	.347	5.000	.790	.600	.120	.430	**MS1160**	T20
1	.630	**A3SC R/L 060116**	.063	1.65	.375	.375	.347	3.500	1.100	1.040	.410	.870	**MS1488**	T15
1	.390	**A3SC R/L 080110**	.063	.79	.500	.500	.472	5.000	.790	.600	-	.430	**MS1160**	T20
1	.630	**A3SC R/L 080116**	.063	1.65	.500	.500	.472	3.500	1.180	1.040	.290	.870	**MS1944**	T25
1	.630	**A3SC R/L 100116**	.063	1.65	.625	.625	.597	4.500	1.180	1.040	.160	.870	**MS1944**	T25
1	.630	**A3SC R/L 120116**	.063	1.65	.750	.750	.722	4.500	1.180	1.040	-	.870	**MS1944**	T25
2	.390	**A3SC R/L 060210**	.087	.79	.375	.375	.340	5.000	.790	.600	.120	.430	**MS1160**	T20
2	.390	**A3SC R/L 080210**	.087	.79	.500	.500	.465	5.000	.790	.600	-	.430	**MS1160**	T20
2	.630	**A3SC R/L 080216**	.087	1.65	.500	.500	.465	3.500	1.140	1.040	.290	.870	**MS1944**	T25
2	.630	**A3SC R/L 100216**	.087	1.65	.625	.625	.590	4.500	1.180	1.040	.160	.870	**MS1944**	T25
2	.630	**A3SC R/L 120216**	.087	1.65	.750	.750	.715	4.500	1.180	1.040	-	.870	**MS1944**	T25
3	.390	**A3SC R/L 060310**	.120	.79	.375	.375	.330	5.000	.790	.600	.120	.430	**MS1160**	T20
3	.390	**A3SC R/L 080310**	.120	.79	.500	.500	.455	5.000	.790	.600	-	.430	**MS1160**	T20
3	.630	**A3SC R/L 080316**	.120	2.05	.500	.500	.455	3.500	1.140	1.040	.290	1.060	**MS1944**	T25
3	.630	**A3SC R/L 100316**	.120	2.05	.625	.625	.580	4.500	1.180	1.040	.160	1.060	**MS1944**	T25
3	.630	**A3SC R/L 120316**	.120	2.05	.750	.750	.705	4.500	1.180	1.040	-	1.060	**MS1944**	T25
3	1.020	**A3SC R/L 120326**	.120	2.44	.750	.750	.705	4.500	1.670	1.040	-	1.260	**MS1595**	T30
3	.630	**A3SC R/L 160316**	.120	2.44	1.000	1.000	.955	6.000	1.180	1.240	-	1.260	**MS1944**	T25
3	1.020	**A3SC R/L 160326**	.120	2.44	1.000	1.000	.955	6.000	1.670	1.260	-	1.260	**MS1595**	T30
3	1.260	**A3SC R/L 200332**	.120	2.44	1.250	1.250	1.205	6.000	1.970	1.670	.160	1.260	**MS1595**	T30
4	.390	**A3SC R/L 060410**	.159	.79	.375	.375	.310	5.000	.790	.600	.120	.430	**MS1160**	T20
4	.390	**A3SC R/L 080410**	.159	.79	.500	.500	.435	5.000	.790	.600	-	.430	**MS1160**	T20
4	.630	**A3SC R/L 080416**	.159	2.05	.500	.500	.435	3.500	1.140	1.040	.290	1.060	**MS1944**	T25
4	.630	**A3SC R/L 100416**	.159	2.05	.625	.625	.560	4.500	1.180	1.040	.160	1.060	**MS1944**	T25
4	.630	**A3SC R/L 120416**	.159	2.05	.750	.750	.685	4.500	1.180	1.040	-	1.060	**MS1944**	T25
4	1.020	**A3SC R/L 120426**	.159	2.44	.750	.750	.685	4.500	1.670	1.040	-	1.260	**MS1595**	T30
4	.630	**A3SC R/L 160416**	.159	2.44	1.000	1.000	.933	6.000	1.180	1.240	-	1.260	**MS1944**	T25
4	1.020	**A3SC R/L 160426**	.159	2.44	1.000	1.000	.933	6.000	1.670	1.260	-	1.260	**MS1595**	T30
4	1.260	**A3SC R/L 200432**	.159	2.44	1.250	1.250	1.285	6.000	1.970	1.670	.160	1.260	**MS1595**	T30

NOTE:
For insert sizes 5, 6, and 8 see page B71

A3 Screw-Clamping Holder Options

C-style reinforced maximum support toolholder with circular clearance

- provides maximum support for cut-off operations
- for cut-off to center or small through-hole applications
- ideal for A3 deep grooving operations as well

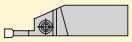
NOTE: A2 inserts can be used in A3 holders with equal seat sizes

NOTE: Torque recommendation for clamp screw see page E53

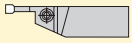
S-style standard support toolholder with straight clearance

- provides maximum flexibility
- unlimited diameter capability for cut-off to through-hole applications
- narrower support blade width allows full insert width flexibility for A3 deep grooving operations
- straight clearance is also available in selected M-style maximum support integral shank and modular toolholders

Order example:
Right hand: **A3SCR050110**

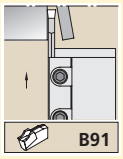


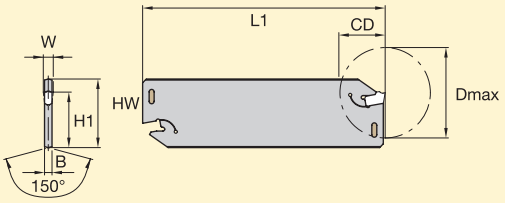
Left hand: **A3SCL050110**



A2 Cut-Off Blades

A2BNSN

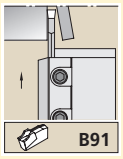


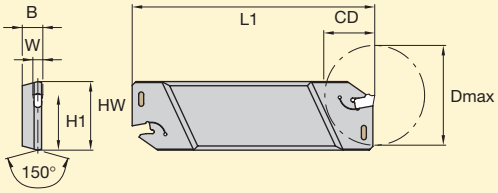


*Seat size 1 blades only

HW inch	HW mm	Seat size	Catalog number	W	W1	H1	L1	B	Dmax*	CD	Assembly** Wrench A2
.748	19	1	**A2BNSN19X0116**	.063	.051	.606	3.39	.071	1.181	.63	170.137
1.024	26	1	**A2BNSN26J0117**	.063	.051	.843	4.33	.071	1.339	.66	170.137
1.260	32	1	**A2BNSN32M0119**	.063	.051	.984	5.91	.095	1.496	.74	170.137
.748	19	2	**A2BNSN19X02**	.087	-	.606	3.39	.071	-	.80	170.137
1.024	26	2	**A2BNSN26G02**	.087	-	.843	3.54	.071	-	1.00	170.137
1.024	26	2	**A2BNSN26J02**	.087	-	.843	4.33	.071	-	1.00	170.137
1.024	26	2	**A2BNSN26M02**	.087	-	.843	5.91	.071	-	1.00	170.137
1.260	32	2	**A2BNSN32M02**	.087	-	.984	5.91	.071	-	2.40	170.137
1.024	26	3	**A2BNSN26G03**	.120	-	.843	3.54	.095	-	1.60	170.137
1.024	26	3	**A2BNSN26J03**	.120	-	.843	4.33	.095	-	1.60	170.137
1.024	26	3	**A2BNSN26M03**	.120	-	.843	5.91	.095	-	1.60	170.137
1.260	32	3	**A2BNSN32H03**	.120	-	.984	3.94	.095	-	2.00	170.137
1.260	32	3	**A2BNSN32M03**	.120	-	.984	5.91	.095	-	2.00	170.137
1.024	26	4	**A2BNSN26J04**	.159	-	.843	4.33	.134	-	1.60	170.137
1.260	32	4	**A2BNSN32M04**	.159	-	.984	5.91	.134	-	2.00	170.137
1.024	26	5	**A2BNSN26J05**	.199	-	.843	4.33	.173	-	1.60	170.130
1.260	32	5	**A2BNSN32M05**	.199	-	.984	5.91	.173	-	2.40	170.130
1.024	26	6	**A2BNSN26J06**	.238	-	.843	4.33	.213	-	1.60	170.130
1.260	32	6	**A2BNSN32M06**	.238	-	.984	5.91	.213	-	2.40	170.130
2.047	52	8	**A2BNSN52X08**	.317	-	1.780	10.24	.291	-	4.90	170.132

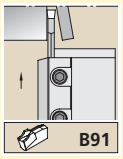
A2BNC

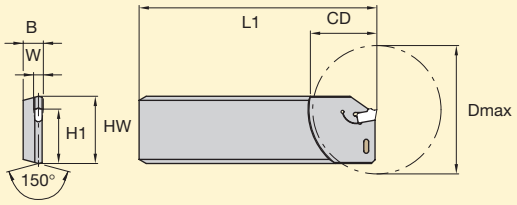




Reinforced Blades

A2BHC





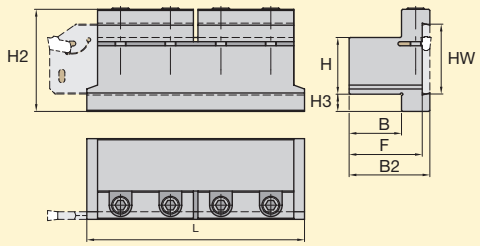
Reinforced Blades

HW inch	HW mm	Seat size	Catalog number Right hand/Left hand	W	W1	H1	L1	B	Dmax	CD	Assembly** Wrench
1.024	26	2	**A2BNC R/L 26J0221**	.087	-	.843	4.33	.315	1.654	.80	170.137
1.260	32	2	**A2BNC R/L 32J0221**	.087	-	.984	4.33	.315	1.654	.80	170.137
1.024	26	3	**A2BNC R/L 26J0321**	.120	-	.843	4.33	.315	1.654	.80	170.137
1.260	32	3	**A2BNC R/L 32J0321**	.120	-	.984	4.33	.315	1.654	.80	170.137
1.024	26	4	**A2BNC R/L 26J0421**	.159	-	.843	4.33	.315	1.654	.80	170.137
1.260	32	4	**A2BNC R/L 32J0421**	.159	-	.984	4.33	.315	1.654	.80	170.137
1.260	32	3	**A2BHC R/L 32K0333**	.120	-	.984	4.92	.313	2.598	1.30	170.137
1.260	32	4	**A2BHC R/L 32K0433**	.159	-	.984	4.92	.313	2.598	1.30	170.137

** Assembly wrench 170.137 and 170.130 must be ordered separately.

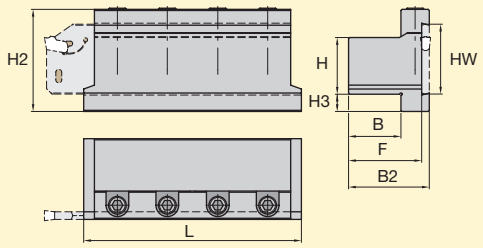
Order example:
A2BNSN19X0116

A2TE – Integral Clamp



HW inch	HW mm	H	Catalog number	B	F	H2	B2	H3	L	Clamp	Clamp Screw	Hex (mm)
.480	19	.625	**A2TEN1019**	.625	.945	1.18	1.02	.16	2.95	-	**125.525**	4
1.024	26	.750	**A2TEN1226**	.750	1.161	1.57	1.34	.32	3.39	-	**125.625**	5
1.260	32	1.000	**A2TEN1632**	1.000	1.417	1.89	1.63	.30	4.33	-	**125.630**	5
1.260	32	1.250	**A2TEN2032**	1.250	1.673	1.97	1.89	.13	4.33	-	**125.630**	5
2.047	52	1.500	**A2TEN2452**	1.500	2.008	3.15	2.32	.83	5.32	-	**125.835**	6
2.047	52	2.000	**A2TEN3252**	2.000	2.520	3.15	2.84	.35	5.32	-	**125.835**	6

A2TZ – Removable Clamp



HW inch	HW mm	H	Catalog number	B	F	H2	B2	H3	L	Clamp	Clamp Screw	Hex (mm)
.480	19	.750	**A2TZN1219**	.750	1.220	1.46	1.30	.16	3.39	**168.935**	**125.516**	4
1.024	26	.750	**A2TZN1226**	.750	1.201	1.65	1.38	.31	3.39	**168.682**	**125.616**	5
1.260	26	1.000	**A2TZN1626**	1.000	1.457	1.89	1.63	.31	3.39	**168.682**	**125.616**	5
1.260	32	1.000	**A2TZN1632**	1.000	1.417	1.89	1.63	.30	4.33	**168.936**	**125.616**	5
2.047	26	1.250	**A2TZN2026**	1.250	1.713	1.97	1.89	.12	3.39	**168.682**	**125.616**	5
2.047	32	1.250	**A2TZN2032**	1.250	1.673	1.97	1.89	.13	4.33	**168.936**	**125.616**	5

Order example:
A2TEN1019

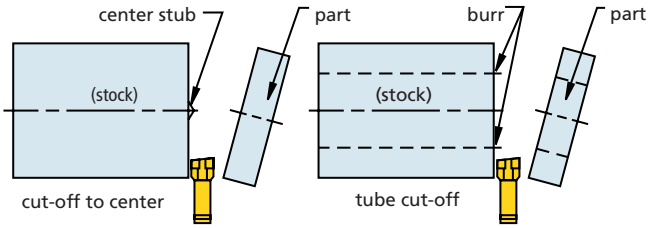
Definitions and Guidelines

1. width of cut (W) = width of the insert
2. lead angle = 0° (neutral) 6°, 10°, 15°, 16° (RH or LH)

To reduce the burr of cut-off faces:

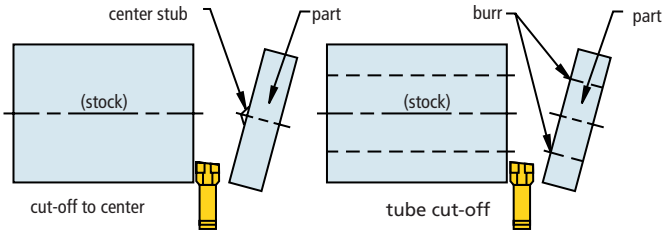
- To reduce burr formation on the part, use lead angle type insert (figure 1 & 2). Lead angle on a cut-off insert reduces the burr that remains on the part, but decreases tool life and increases tool side deflection and possibly cycle time.

fig. 1
insert selection **right-hand lead**



Right-hand lead insert leaves center stub or burr on stock and produces clean part.

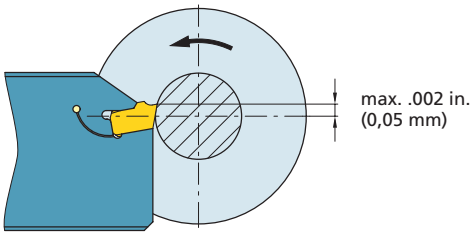
fig. 2
insert selection **left-hand lead**



Left-hand lead insert leaves center stub or burr on part and produces clean stock surface.

- Check tool height and maintain on center with part diameter.
- The cutting edge height should be within ±.004 in. (0,1 mm) to the center; recommended cutting position is .002 in. (0,05 mm) above center.

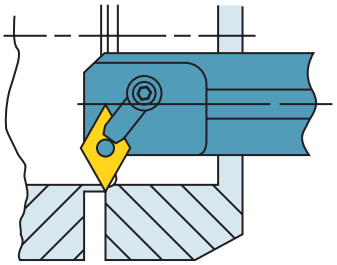
fig. 3
Above center:



- If 0° lead angle is mandatory, use the narrowest possible cut-off insert and blade. This will minimize the center stub or cut-off burr length. Decrease the feed rate to .002 in. (0,05 mm) or less at the point where diameter equals insert width.

- On tubing-type parts that require a chamfer on the ID, align ID chamfer tool with cut-off surface. This will enable the chamfering operation to actually separate the part from the bar (see figure 4). Note the part may drop onto the chamfering bar which, in this case, will act like a part's catcher.

fig. 4
internal chamfer line up



To improve surface finish of cut-off faces:

- Use insert with 0° lead angle.
- Increase coolant flow or improve application technique, as shown in figure 5.
- Decrease the feed rate near the break-through point of the cut.
- Check that the grooving tool is set at a right angle.
- Use blades with the greatest possible face height and smallest possible cutting width.
- Use grade KT315, specially for a sub-spindle machine or for cut-off to a through hole.
- Increase the speed.

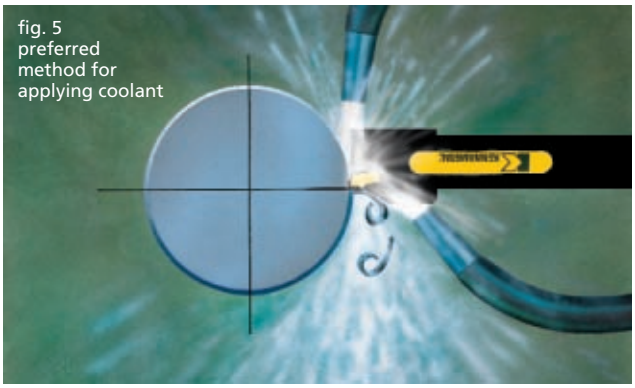


fig. 5
preferred
method for
applying coolant

- Mount cut-off tool upside down. This allows gravity to remove chips and avoids cutting the chips twice. Another benefit from mounting the tool upside down is preventing chips from wedging between the tool insert and the groove side walls, which galls the side wall surfaces.

A2 and A3 compatibility:

A2 and A3 inserts can be interchangeably used on all screw-clamping holders within the following guidelines:

- A2 inserts can be used in A3 holders with equal seat sizes.
- A3 inserts CANNOT be used in self-clamping cut-off blades.
- A2 inserts are NOT recommended for face grooving toolholders.
- A2 inserts can be used in A3 modular blades if the guidelines noted above are followed.

KENNAMETAL MOBILE

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Increase your performance and productivity.

The easy way to transfer CNC data to and from your machine tools and manage your machine tool control profiles.

cncGcoder™
Software to receive/send/edit and save CNC programs & machine tool control profiles.

Complete package containing Palm Zire 71®, Palm docking station with USB and serial port, 16 MB SD memory card (Kennametal Mobile software), RS232 interface cable, desktop software and digital photo.

cncGcoder™ technical details
Send and receive CNC programs up to 1 MB – using the Kennametal Mobile and the RS232 port on the machine tool control. Manage up to 1,000 different machine tool control profiles. (CNC programs must be in ISO or ASCII format)

The Kennametal Mobile also includes all the standard Palm software and features.

Kennametal Mobile
Order number: 2253135

Software upgrade for Mazak® controls
This upgrade works in combination with the standard Kennametal Mobile (2253135) and adds the ability to communicate with Mazak® controls.
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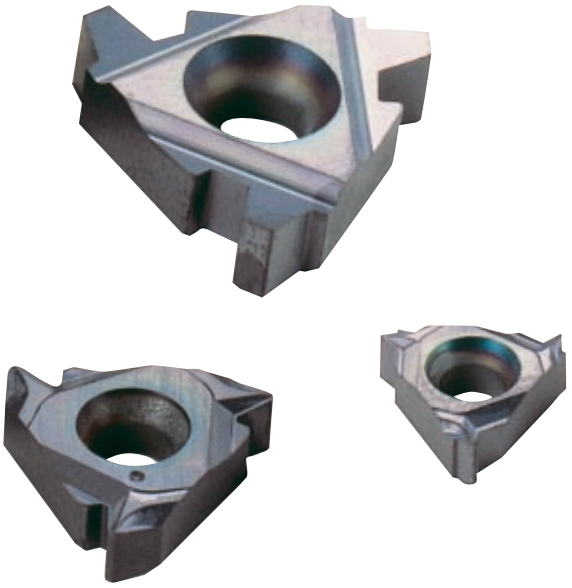


Threading Tools

Threading Application Guide **C2**
Grade System for Threading Applications **C3**

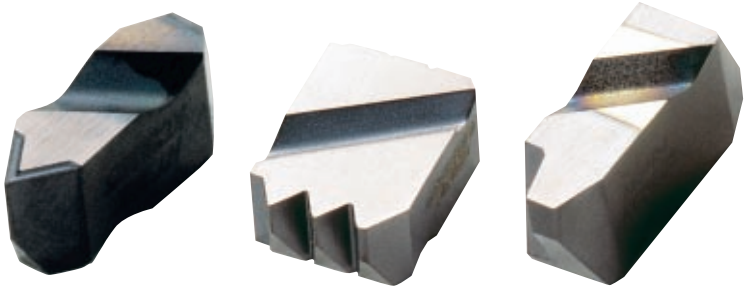
LT Threading **C4**

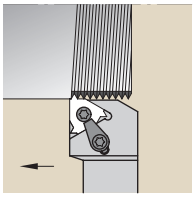
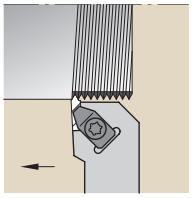
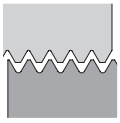
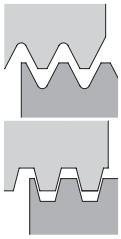
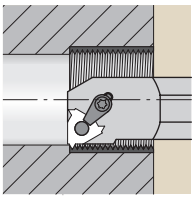
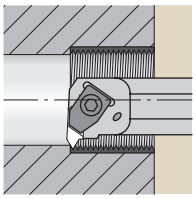
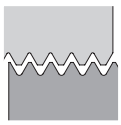
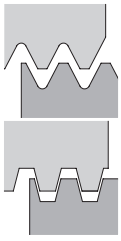
KENNA PERFECT Selection Guide C6
Inserts C8
Toolholders C23
Boring Bars and Heads C26

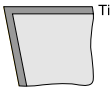
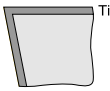
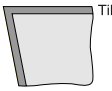
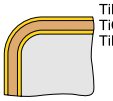
TOP NOTCH Threading **C30**

KENNA PERFECT Selection Guide C32
Inserts C34
Toolholders C47
Boring Bars and Heads C52
Cartridges C57

Technical Data **C58**



Application	LT Laydown Triangle Threading	TOP NOTCH Threading
External Threading	Square Shank Toolholder Sizes: • inch – .500 - 1.25 inch available • metric – 12 mm - 32 mm available also available in KM and KM Micro quick-change tooling 	Square Shank Toolholder Sizes: • inch – .375 - 1.5 inch available • metric – 10 mm - 32 mm available also available in KM and KM Micro quick-change tooling 
Fine Pitch 	Cresting (Full Profile) and Partial Profile UN maximum TPI of 48 ISO minimum pitch of 0,5 mm Advantages: • chip control in full profile cresting inserts (available to 32 TPI and 0,5 mm pitch) • shims allow adjustment of insert inclination for left-handed and small-diameter threads	Cresting (Full Profile): UN maximum TPI of 32 ISO minimum pitch of 1,5 mm Partial Profile – Flat Top (NTF and NTK): UN maximum TPI of 44 ISO minimum pitch of 0,6 mm Partial Profile – Chip Control (NT-K): UN maximum TPI of 36 ISO minimum pitch of 0,7 mm Advantages: • simple system does not require shim selection • rigid clamping allows fewer passes and ensures reliable performance even on difficult-to-machine materials
Coarse Pitch/ Heavy Duty 	Cresting (Full Profile): UN minimum TPI of 8 ISO maximum pitch of 5,0 mm Partial Profile: UN minimum TPI of 5 ISO maximum pitch of 5,0 mm Advantages: • chip control in full profile cresting inserts (available to 8 TPI and 3,0 mm pitch) • shims allow adjustment of insert inclination for left-handed and coarse-pitch or multi-start threads	Cresting (Full Profile): UN minimum TPI of 7 ISO maximum pitch of 3,0 mm Partial Profile – Flat Top and Chip Control (NT-C and NT-CK): UN minimum TPI of 4.5 ISO maximum pitch of 5,5 mm Advantages: • simple system does not require shim selection • rigid clamping allows fewer passes and ensures reliable performance even on difficult-to-machine materials • ideal for heavy-duty forms like Acme, American Buttress, API, and multitooth threading
Internal Threading	Boring Bar Diameters: • inch – .375 - 1.25 inch • metric – 12 mm - 32 mm • steel and carbide • min. bore – .500 inch (13 mm) Boring Head Sizes: • inch – 1.0 - 2.0 inch • metric – 40 mm - 50 mm • min. bore – 1.20 inch (45 mm) also available in KM quick-change tooling 	Boring Bar Diameters: • inch – .312 - 2.5 inch • metric – 7,9 mm - 50 mm • steel, carbide, and heavy metal (inch only) • min. bore – .440 inch (11,5 mm) Boring Head Sizes: • inch – 1.25 - 2.5 inch • metric – 32 mm - 60 mm • min. bore – 1.75 inch (44 mm) also available in KM quick-change tooling 
Fine Pitch 	Cresting (Full Profile) and Partial Profile UN maximum TPI of 48 ISO minimum pitch of 0,5 mm Advantages: • chip control in full profile cresting inserts (available to 36 TPI and 0,5 mm pitch) • shims allow adjustment of insert inclination for left-handed and small-diameter threads on boring bars larger than .625 inch (16 mm)	Cresting (Full Profile): UN maximum TPI of 16 ISO minimum pitch of 1,5 mm Partial Profile – Flat Top (NT-1L, NTF and NTK): UN maximum TPI of 24 ISO minimum pitch of 1,0 mm Partial Profile – Chip Control (NT-K): UN maximum TPI of 20 ISO minimum pitch of 1,25 mm Advantages: • simple system does not require shim selection • rigid clamping allows fewer passes and ensures reliable performance even on difficult-to-machine materials
Coarse Pitch/ Heavy Duty 	Cresting (Full Profile): UN minimum TPI of 8 ISO maximum pitch of 5,0 mm Partial Profile: UN minimum TPI of 5 ISO maximum pitch of 5,0 mm Advantages: • chip control in full profile cresting inserts (available to 8 TPI and 2,5 mm pitch) • shims allow adjustment of insert inclination for left-handed and coarse-pitch or multi-start threads on boring bars larger than .625 inch (16 mm)	Cresting (Full Profile): UN minimum TPI of 8 ISO maximum pitch of 3,0 mm Partial Profile – Flat Top and Chip Control (NT-C and NT-CK): UN minimum TPI of 4.5 ISO maximum pitch of 5,5 mm Advantages: • simple system does not require shim selection • rigid clamping allows fewer passes and ensures reliable performance even on difficult-to-machine materials • Ideal for heavy duty forms like Acme, American Buttress, API, and multitooth threading

Type	Grade	Coating	Composition and Application	Standard designation	Area of use: Wear resistance ↔ Toughness (05 10 15 20 25 30 35 40 45)
Uncoated Carbide Grades	**K68**	C3	**composition:** A hard, low binder content, unalloyed WC/Co fine-grained grade. **application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, nonmetals, and most high-temperature alloys. Use as a general purpose grade for non-ferrous materials.	P, M, K, N, S, H	
PVD-Coated Carbide Grades	**KC5010**	 C3, C4	**composition:** An advanced PVD TiAlN coating over a very deformation-resistant unalloyed WC-Co substrate. **application:** The KC5010 grade is ideal for finishing to general machining of most workpiece materials at higher speeds. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials and super alloys under stable conditions. It also performs well machining hardened and short-chipping materials.	P, M, K, N, S, H	
	KC5025	 C2, C6	**composition:** An advanced PVD TiAlN-coated grade with a tough, very fine grain unalloyed substrate. **application:** For general purpose machining of most steels, stainless steels, high-temperature alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium, and will handle interruptions and high feed rates.	P, M, K, N, S, H	
	KC5410	 C3 – C4	**composition:** A PVD TiB2 coating over a very deformation-resistant unalloyed substrate. **application:** The KC5410 grade is designed for roughing, semifinishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys and magnesium alloys. The TiB2 coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow, and outstanding wear resistance. In addition, built-up edge is prevented because this coating has a very low affinity for aluminum. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Molded inserts have a light hone.	P, M, K, N, S, H	
	KU25T NEW!	C2, C6	**composition:** An advanced PVD coating over a tough and highly wear-resistant carbide substrate. **application:** KU25T is ideal for finishing to general machining of most workpiece materials. This grade provides the toughness needed to handle the demands of grooving, threading, and cut-off operations. KU25T performs extremely well when machining most steels, stainless steels, cast irons, non-ferrous materials, and superalloys under stable conditions. KU25T can also be effectively applied when machining hardened and short-chipping materials.	P, M, K, N, S, H	
PVD-Coated Cermet	**KT315**	 C3, C7	**composition:** A multi-layered, PVD TiN/TiCN/TiN, coated cermet turning grade. **application:** Ideal for high-speed finishing to medium machining of most carbon and alloy steels and stainless steels. Performs very well in cast and ductile iron applications too. Provides long and consistent tool life and will produce excellent workpiece finishes.	P, M, K, N, S, H	

Engineering Your Competitive Edge®

KENNAMETAL®

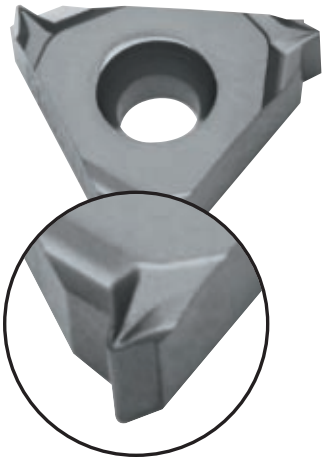
LT – Laydown

Triangle Threading ...

... inserts and tools that provide the highest accuracy and quality level for daily production needs!

Choosing the LT Threading System

- LT is the system of choice for fine-pitch threads, high-helix/multi-start threads, and single-point threading in small-diameter bores.
- A wide selection of CB-style chip control inserts provide superior management of the chip for excellent surface finishes and minimal operator intervention.
- This system offers an extensive selection of metric (ISO) and common European thread forms.
- The low-profile design of the LT tooling system enables unrestricted chip flow – ideal for ID threads.
- Variable shim angles enable proper cutting geometry for high helix angle and reverse helix angle threading. This maximizes tool life and improves thread quality.
- Get more parts per insert with the economy of the LT insert's three cutting edges.



Precision-Ground Thread Form on LT and LT-CB

- minimizes built-up edge
- precisely cuts most common materials
- reduces cutting forces
- ensures accurate high-quality threads

Superior Chip Control

- eliminates long, troublesome coils
- excellent for internal threading operations
- available in both partial and full profile inserts for all common thread forms

KC5010 + KC5025 Premium PVD TiAlN-Coated Grades

- increase tool life at existing machining conditions
- increase productivity by outperforming conventional PVD grades with up to a 30% advantage in cutting speeds

New KENNA UNIVERSAL Inserts

- precision molded LT-K thread form provides outstanding utility and value
- excellent chip control combined with the new KU25T grade enables trouble-free threading on a variety of workpiece materials

KENNA PERFECT – LT Threading

5 Easy Steps to Improve Productivity

What you need to know:

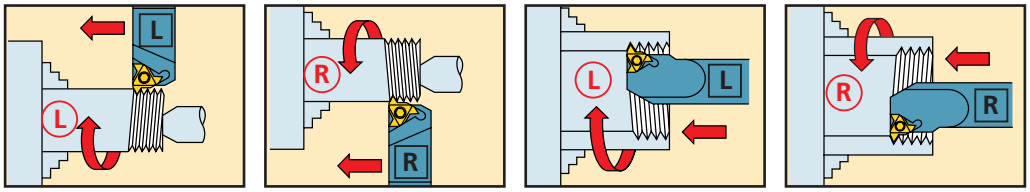
- external/internal operation
- spindle rotation/hand of thread
- feed direction

1st Step – Select Threading Method and Hand of Tooling

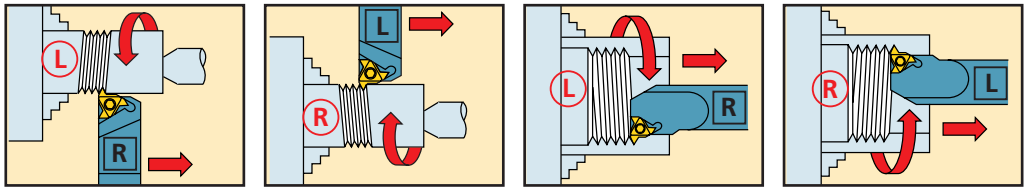
(L) or (R) – hand of thread

[L] or [R] – hand of holder/insert

• Feed direction toward the chuck – standard helix



• Feed direction away from the chuck – reverse helix



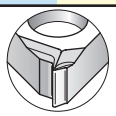
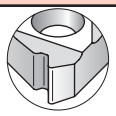
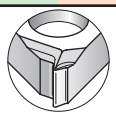
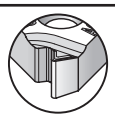
2nd Step – Choose Insert for Application

- See threading insert overview on page C9.
- Select cresting inserts for fully controlled thread form including diameter. Cresting inserts eliminate the need for deburring and are optimized for the best tool life at that pitch.
- Non-cresting partial profile inserts offer the flexibility to cut a variety of thread pitches with one insert.
- Note insert size for toolholder selection.

Insert Size	catalog number	KC5025	KC5010
11	LT11NRA60	●	●
16	LT16NRAG60	●	●

3rd Step – Select Grade and Speed

Recommendations for Grade and Speed Selection – sfm (m/min)

	Workpiece Material	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys
KENNA PERFECT	Insert Style	CB Chipbreaker 		Flat Top 	CB Chipbreaker 	
	Optimum Cutting Conditions	KC5010 160 - 750 (50 - 230)	KC5010 160 - 600 (50 - 185)	KC5010 230 - 700 (70 - 210)	KC5010 230 - 1300 (70 - 390)	KC5010 65 - 400 (20 - 120)
	First Choice	KC5025 130 - 650 (40 - 200)	KC5025 130 - 450 (40 - 135)	KC5025 200 - 475 (60 - 145)	KC5025 160 - 1150 (50 - 360)	KC5025 35 - 330 (10 - 100)
KENNA UNIVERSAL	Insert Style	-K Chipbreaker 				
	Selection	KU25T 80 - 450 (25 - 140)	KU25T 80 - 350 (25 - 100)	KU25T 100 - 360 (30 - 110)	KU25T 100 - 1000 (30 - 300)	KU25T 35 - 280 (10 - 85)

CB-style chip control inserts are not available with some thread forms.
In those cases, flat top inserts can be substituted.

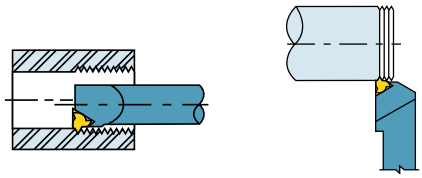
4th Step – Select Holder from Catalog Page

Note: The insert size must match the gage insert size of your toolholder selection:

Required information:

- external/internal operation
- minimum bore diameter (for internal operations)
- hand of tool
- insert size (gage insert)

Select the appropriate holder for the insert size and hand



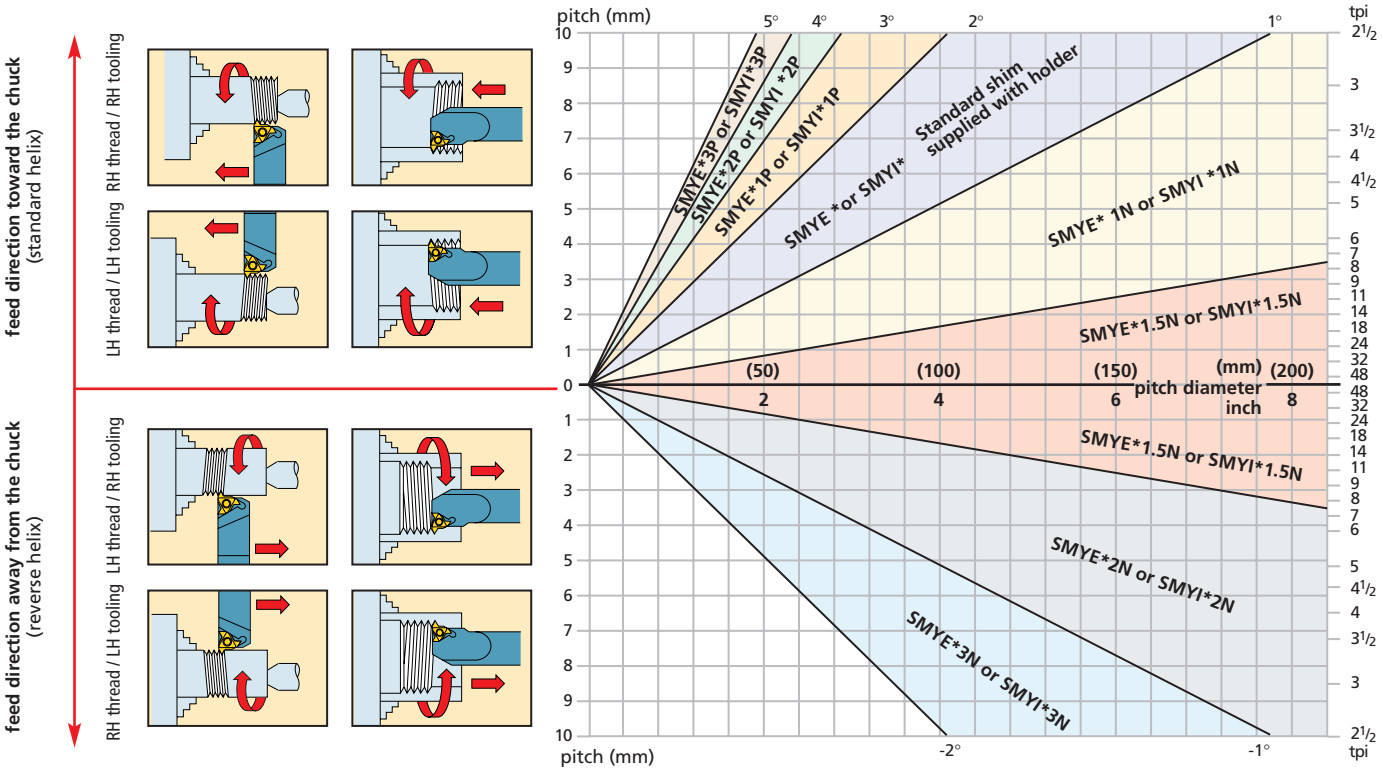
catalog number	gage insert	min. bore diameter	shim
S1212LSER3	LT16NR	.90 in	SM-YI3
A2020LSER16	LT16NR	16 mm	SM-YI3

5th Step – Select Appropriate Shim

Required information:

- thread form (tpi or pitch)
- pitch diameter
- helix method (hand of tool, feed direction, hand of thread)

Select the proper shim SMYE... for external RH or internal LH
SMYI... for internal RH or external LH



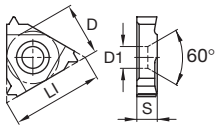
*denotes shim size: 3 = insert size 16 (3/8 in. D)
4 = insert size 22 (1/2 in. D)

If recommended shim is different from shim supplied with toolholder, order shim separately.

NOTE: Optimize your threading operation by using the proper infeed angle and the recommended infeed values. See the Technical Section on pages C58-C60 of this catalog. Also see detailed shim selection information on page, C61-C63.

LT Threading – Insert Identification System

insert size	LI (mm)	D (inch)	D (mm)	S (inch)	S (mm)	D1 (inch)	D1 (mm)
11	11,0	.250	6,35	.126	3,20	.128	3,25
16	16,5	.375	9,52	.143	3,63	.155	3,94
22	22,0	.500	12,70	.188	4,78	.192	4,88

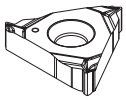


2. Cutting Edge Length (Size)

ER – external right hand
EL – external left hand
NR – internal right hand
NL – internal left hand

3. Hand of Insert

□ – flat top
CB – chipbreaker
K – KENNA UNIVERSAL chipbreaker

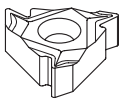


6. Chip Control

LT 16 ER 20 UN CB

1. Type of Insert

LT-laydown triangle threading



4. Thread Pitch

designation	thread pitch (mm)	TPI
partial profile		
A	0,50 - 1,5	48 - 16
AG	0,50 - 3,0	48 - 8
G	1,75 - 3,0	14 - 8
N	3,50 - 5,0	7 - 5
full profile		
actual TPI or pitch in mm is designated	0,5 - 4,0	48 - 8

5. Thread Profile

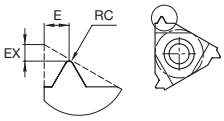
ISO	– ISO metric 60°
UN	– American UN 60°
60	– Partial Profile non-cresting 60°
55	– Partial Profile non-cresting 55°
W	– Whitworth 55°
BSPT	– British Standard Pipe Thread 55°
NPT	– American National Pipe Thread 60°
ACME	– American Acme
STACME	– American Stub Acme
TR	– Trapez DIN 103
RD	– Round DIN 405
UNJ	– Controlled root radius 60°
NPTF	– Dryseal 60°
API	– American Petroleum Institute Threads
BUT	– API Buttress Casing
APIRD	– API Round

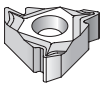
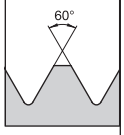
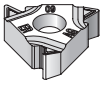
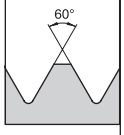
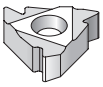
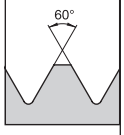
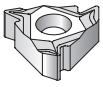
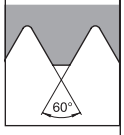
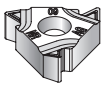
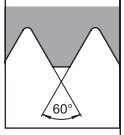
The Kennametal LT Advantage:

Every box of 10 inserts includes a free Torx wrench and spare locking screw.

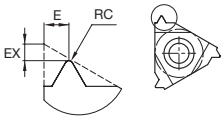
Style			Thread Profile	Standard	Tolerance Class	Crest-ing	Application	Page
CB	-K	Flat Top						
LT-60CB	LT-60K	LT-60	Partial Profile 60°	-	-	N	general use for 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	C10
LT-ISOCB	LT-ISOK	LT-ISO	Metric ISO	ISO R262, DIN 13	6g / 6H	Y	widely used metric 60° V-form for all industries	C11
LT-UNCB	LT-UNK	LT-UN	American UN	ANSI B1.1:74	2A / 2B	Y	widely used inch-based 60° V-form for all industries	C13
		LT-UNJ	UNJ	MIL-S-8879C	3A / 3B	Y	controlled root radius on external threads for military and aerospace industries	C15
LT-NPTCB		LT-NPT	NPT	USAS B2.1:1968	Standard NPT	Y	National Pipe Thread standard forms for pipe fittings	C15
LT-NPTFCB		LT-NPTF	NPTF	ANSI B1.20.3-1976	Class 2	Y	dryseal-type NPT form for pipe fittings	C16
		LT-55	Partial Profile 55°	-	-	N	general use for 55° thread forms such as Whitworth, BSW, and BSP where non-cresting inserts are desired to cut a variety of pitches	C17
LT-WCB		LT-W	Whitworth, BSW, BSP	BS 84:1956, ISO 228/1:1982, DIN 259	Medium Class A	Y	widely used 55° form for gas and water connections	C17
		LT-BSPT	BSPT	BS 21:1985	Standard BSPT	Y	55° form for pipe fittings	C19
		LT-API	API Rotary Shoulder Connections	API SPEC. 7:1990	Standard API	Y	60° V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms	C19
		LT-BUT	API Buttress Casing	API SPEC. 7:1990	Standard API	Y	buttress-style form used for pipe casing connections in the oil and gas industry	C19
		LT-APIRD	API Round	API STD. 5B:1979	Standard API RD	Y	60° V-form with large radius for casing, tubing, and line pipe in the oil and gas industry including 8 and 10 round forms	C20
		LT-ACME	Acme	ANSI B1.5:1988	3G	N	29° truncated thread form for motion applications in a wide variety of industries	C20
		LT-STACME	Stub Acme	ANSI B1.8:1988	2G	N	shallow depth 29° truncated thread form for motion applications in a wide variety of industries	C21
		LT-TR	Trapez	DIN 103	7e / 7H	N	30° truncated metric thread form for motion applications	C21
		LT-RD	Round	DIN 405	7h / 7H	Y	round thread form for tube fittings in the chemical and food industries	C22

LT Threading Inserts



		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-ER-60CB 	**Partial Profile 60° External** 	16	LT16ERAG60CB		0,50-3,00	48-8	-	.003	0,08	.035	0,9	.059	1,5	●	●	
LT-ER-60K 	**Partial Profile 60° External** 	16	LT16ERAG60K		0,50-3,00	48-8	-	.003	0,08	.047	1,2	.067	1,7			●
		16	LT16ERG60K		1,75-3,00	14-8	-	.007	0,18	.047	1,2	.067	1,7			●
LT-ER/L-60 	**Partial Profile 60° External** 	16	LT16ERA60		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9	●	●	
		16		LT16ELA60	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16ERAG60		0,50-3,00	48-8	-	.003	0,08	.047	1,2	.067	1,7	●	●	
		16		LT16ELAG60	0,50-3,00	48-8	-	.003	0,08	.047	1,2	.067	1,7		●	
		16	LT16ERG60		1,75-3,00	14-8	-	.011	0,28	.047	1,2	.067	1,7	●	●	
		16		LT16ELG60	1,75-3,00	14-8	-	.011	0,28	.047	1,2	.067	1,7		●	
		22	LT22ERN60		3,50-5,00	7-5	-	.021	0,53	.067	1,7	.098	2,5		●	
		22		LT22ELN60	3,50-5,00	7-5	-	.021	0,53	.067	1,7	.098	2,5		●	
LT-NR-60CB 	**Partial Profile 60° Internal** 	11	LT11NRA60CB		0,50-1,50	48-16	-	.002	0,05	.024	0,6	.031	0,8		●	
		16	LT16NRAG60CB		0,50-3,00	48-8	-	.002	0,05	.035	0,9	.059	1,5		●	
		16	LT16NRG60CB		1,75-3,00	14-8	-	.006	0,16	.039	1,0	.059	1,5		●	
LT-NR-60K 	**Partial Profile 60° Internal** 	11	LT11NRA60K		0,50-1,50	48-16	-	.001	0,03	.031	0,8	.035	0,9			●
		16	LT16NRAG60K		0,50-3,00	48-8	-	.002	0,04	.047	1,2	.067	1,7			●
		16	LT16NRG60K		1,75-3,00	14-8	-	.003	0,08	.047	1,2	.067	1,7			●

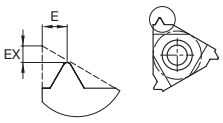
Order example:
Catalog number: LT16ERAG60CB
Insert grade: KC5010



		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-NR/L-60	Partial Profile 60° Internal	11	LT11NRA60		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9	●	●	
		11		LT11NLA60	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16NRA60		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9	●	●	
		16		LT16NLA60	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16NRAG60		0,50-3,00	48-8	-	.002	0,05	.047	1,2	.067	1,7	●	●	
		16		LT16NLAG60	0,50-3,00	48-8	-	.002	0,05	.047	1,2	.067	1,7		●	
		16	LT16NRG60		1,75-3,00	14-8	-	.006	0,15	.047	1,2	.067	1,7	●	●	
		16		LT16NLG60	1,75-3,00	14-8	-	.006	0,15	.047	1,2	.067	1,7		●	
		22	LT22NRN60		3,50-5,00	7-5	-	.012	0,31	.067	1,7	.098	2,5		●	
		22		LT22NLN60	3,50-5,00	7-5	-	.012	0,31	.067	1,7	.098	2,5		●	
LT-ER-ISOCB	ISO Metric-External	16	LT16ER05ISOCB		0,50	-	-	-	-	.047	1,2	.020	0,5	●	●	
		16	LT16ER075ISOCB		0,75	-	-	-	-	.047	1,2	.024	0,6	●	●	
		16	LT16ER10ISOCB		1,00	-	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER125ISOCB		1,25	-	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER15ISOCB		1,50	-	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER175ISOCB		1,75	-	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER20ISOCB		2,00	-	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER25ISOCB		2,50	-	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER30ISOCB		3,00	-	-	-	-	.051	1,3	.059	1,5	●	●	
LT-ER-ISOK	ISO Metric-External	16	LT16ER10ISOK		1,00	-	-	-	-	.028	0,7	.028	0,7			●
		16	LT16ER125ISOK		1,25	-	-	-	-	.043	1,1	.031	0,8			●
		16	LT16ER15ISOK		1,50	-	-	-	-	.031	0,8	.039	1,0			●
		16	LT16ER175ISOK		1,75	-	-	-	-	.047	1,2	.059	1,2			●
		16	LT16ER20ISOK		2,00	-	-	-	-	.039	1,0	.051	1,3			●
		16	LT16ER25ISOK		2,50	-	-	-	-	.047	1,2	.059	1,5			●
		16	LT16ER30ISOK		3,00	-	-	-	-	.051	1,3	.059	1,5			●
LT-ER/L-ISO	ISO Metric-External	16	LT16ER05ISO		0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		16		LT16EL05ISO	0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		16	LT16ER075ISO		0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16EL075ISO	0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16ER10ISO		1,00	-	-	-	-	.027	0,7	.027	0,7	●	●	
		16		LT16EL10ISO	1,00	-	-	-	-	.027	0,7	.027	0,7		●	
		16	LT16ER125ISO		1,25	-	-	-	-	.031	0,8	.035	0,9	●	●	
		16		LT16EL125ISO	1,25	-	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16ER15ISO		1,50	-	-	-	-	.031	0,8	.039	1,0	●	●	
		16		LT16EL15ISO	1,50	-	-	-	-	.031	0,8	.039	1,0	●	●	
		16	LT16ER175ISO		1,75	-	-	-	-	.035	0,9	.047	1,2	●	●	
		16		LT16EL175ISO	1,75	-	-	-	-	.035	0,9	.047	1,2		●	
		16	LT16ER20ISO		2,00	-	-	-	-	.039	1,0	.051	1,3	●	●	
		16		LT16EL20ISO	2,00	-	-	-	-	.039	1,0	.051	1,3		●	
		16	LT16ER25ISO		2,50	-	-	-	-	.043	1,1	.059	1,5	●	●	
		16		LT16EL25ISO	2,50	-	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16ER30ISO		3,00	-	-	-	-	.047	1,2	.063	1,6	●	●	
		16		LT16EL30ISO	3,00	-	-	-	-	.047	1,2	.063	1,6		●	
		22	LT22ER35ISO		3,50	-	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22EL35ISO	3,50	-	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22ER40ISO		4,00	-	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22EL40ISO	4,00	-	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22ER45ISO		4,50	-	-	-	-	.067	1,7	.094	2,4		●	
		22		LT22EL45ISO	4,50	-	-	-	-	.067	1,7	.094	2,4		●	
		22	LT22ER50ISO		5,00	-	-	-	-	.067	1,7	.098	2,5		●	
		22		LT22EL50ISO	5,00	-	-	-	-	.067	1,7	.098	2,5		●	

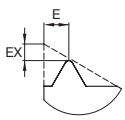
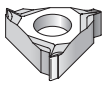
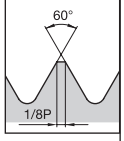
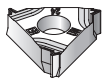
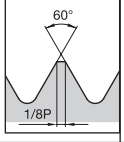
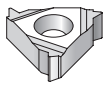
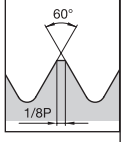
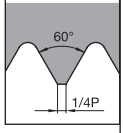
Order example:
Catalog number: LT11NRA60
Insert grade: KC5010

LT Threading Inserts



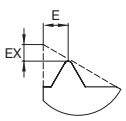
		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-NR-ISOCB	ISO Metric-Internal	11	LT11NR05ISOCB		0,50	-	-	-	-	.047	1,2	.020	0,5		●	
		11	LT11NR075ISOCB		0,75	-	-	-	-	.047	1,2	.020	0,5		●	
		11	LT11NR10ISOCB		1,00	-	-	-	-	.028	0,7	.031	0,8		●	
		11	LT11NR125ISOCB		1,25	-	-	-	-	.028	0,7	.031	0,8		●	
		11	LT11NR15ISOCB		1,50	-	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR10ISOCB		1,00	-	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR125ISOCB		1,25	-	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR15ISOCB		1,50	-	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR175ISOCB		1,75	-	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR20ISOCB		2,00	-	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR25ISOCB		2,50	-	-	-	-	.043	1,1	.059	1,5		●	
LT-NR-ISOK	ISO Metric-Internal	11	LT11NR10ISOK		1,00	-	-	-	-	.028	0,7	.031	0,8			●
		11	LT11NR125ISOK		1,25	-	-	-	-	.028	0,7	.031	0,8			●
		16	LT16NR10ISOK		1,00	-	-	-	-	.028	0,7	.028	0,7			●
		16	LT16NR15ISOK		1,50	-	-	-	-	.031	0,8	.039	1,0			●
		16	LT16NR175ISOK		1,75	-	-	-	-	.047	1,2	.059	1,2			●
		16	LT16NR20ISOK		2,00	-	-	-	-	.039	1,0	.051	1,3			●
		16	LT16NR25ISOK		2,50	-	-	-	-	.047	1,2	.059	1,5			●
		16	LT16NR30ISOK		3,00	-	-	-	-	.051	1,3	.059	1,5			●
LT-NR/L-ISO	ISO Metric-Internal	11	LT11NR05ISO		0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		11		LT11NL05ISO	0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		11	LT11NR075ISO		0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		11		LT11NL075ISO	0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		11	LT11NR10ISO		1,00	-	-	-	-	.024	0,6	.027	0,7		●	
		11		LT11NL10ISO	1,00	-	-	-	-	.024	0,6	.027	0,7		●	
		11	LT11NR125ISO		1,25	-	-	-	-	.031	0,8	.035	0,9		●	
		11		LT11NL125ISO	1,25	-	-	-	-	.031	0,8	.035	0,9		●	
		11	LT11NR15ISO		1,50	-	-	-	-	.031	0,8	.039	1,0	●	●	
		11		LT11NL15ISO	1,50	-	-	-	-	.031	0,8	.039	1,0		●	
		11	LT11NR175ISO		1,75	-	-	-	-	.035	0,9	.043	1,1		●	
		11		LT11NL175ISO	1,75	-	-	-	-	.035	0,9	.043	1,1		●	
		11	LT11NR20ISO		2,00	-	-	-	-	.035	0,9	.043	1,1		●	
		11		LT11NL20ISO	2,00	-	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR05ISO		0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		16		LT16NL05ISO	0,50	-	-	-	-	.024	0,6	.016	0,4		●	
		16	LT16NR075ISO		0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16NL075ISO	0,75	-	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16NR10ISO		1,00	-	-	-	-	.024	0,6	.027	0,7	●	●	
		16		LT16NL10ISO	1,00	-	-	-	-	.024	0,6	.027	0,7		●	
		16	LT16NR125ISO		1,25	-	-	-	-	.031	0,8	.035	0,9		●	
		16		LT16NL125ISO	1,25	-	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16NR15ISO		1,50	-	-	-	-	.031	0,8	.039	1,0	●	●	
		16		LT16NL15ISO	1,50	-	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR175ISO		1,75	-	-	-	-	.035	0,9	.047	1,2		●	
		16		LT16NL175ISO	1,75	-	-	-	-	.035	0,9	.047	1,2		●	
		16	LT16NR20ISO		2,00	-	-	-	-	.039	1,0	.051	1,3	●	●	
		16		LT16NL20ISO	2,00	-	-	-	-	.039	1,0	.051	1,3		●	
		16	LT16NR25ISO		2,50	-	-	-	-	.043	1,1	.059	1,5		●	
		16		LT16NL25ISO	2,50	-	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR30ISO		3,00	-	-	-	-	.043	1,1	.059	1,5	●	●	
		16		LT16NL30ISO	3,00	-	-	-	-	.043	1,1	.059	1,5		●	
		22	LT22NR35ISO		3,50	-	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22NL35ISO	3,50	-	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22NR40ISO		4,00	-	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22NL40ISO	4,00	-	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22NR45ISO		4,50	-	-	-	-	.063	1,6	.094	2,4		●	
		22		LT22NL45ISO	4,50	-	-	-	-	.063	1,6	.094	2,4		●	
		22	LT22NR50ISO		5,00	-	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22NL50ISO	5,00	-	-	-	-	.063	1,6	.090	2,3		●	

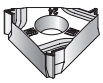
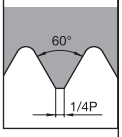
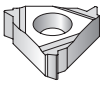
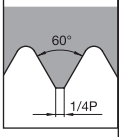
Order example:
Catalog number: LT11NR05ISOCB
Insert grade: KC5025

		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
																
LT-ER-UNCB 	American UN-External 	16	LT16ER32UNCB		-	32	-	-	-	.047	1,2	.020	0,5	●	●	
		16	LT16ER28UNCB			28	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER24UNCB		-	24	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER20UNCB		-	20	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER18UNCB		-	18	-	-	-	.028	0,7	.031	0,8	●	●	
		16	LT16ER16UNCB		-	16	-	-	-	.032	0,8	.031	0,8	●	●	
		16	LT16ER14UNCB		-	14	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER12UNCB		-	12	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER10UNCB		-	10	-	-	-	.047	1,2	.059	1,5	●	●	
		16	LT16ER8UNCB		-	8	-	-	-	.051	1,3	.059	1,5	●	●	
LT-ER-UNK 	American UN-External 	16	LT16ER24UNK		-	24	-	-	-	.028	0,7	.031	0,8			●
		16	LT16ER20UNK		-	20	-	-	-	.028	0,7	.031	0,8			●
		16	LT16ER18UNK		-	18	-	-	-	.028	0,7	.031	0,8			●
		16	LT16ER16UNK		-	16	-	-	-	.035	0,9	.043	1,1			●
		16	LT16ER14UNK		-	14	-	-	-	.047	1,2	.059	1,5			●
		16	LT16ER12UNK		-	12	-	-	-	.043	1,1	.055	1,4			●
		16	LT16ER8UNK		-	8	-	-	-	.047	1,2	.063	1,6			●
LT-ER/L-UN 	American UN-External 	16	LT16ER48UN		-	48	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16EL48UN	-	48	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16ER40UN		-	40	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16EL40UN	-	40	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16ER36UN		-	36	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16EL36UN	-	36	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16ER32UN		-	32	-	-	-	.024	0,6	.024	0,6	●	●	
		16		LT16EL32UN	-	32	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16ER28UN		-	28	-	-	-	.024	0,6	.027	0,7	●	●	
		16		LT16EL28UN	-	28	-	-	-	.024	0,6	.027	0,7		●	
		16	LT16ER24UN		-	24	-	-	-	.027	0,7	.031	0,8	●	●	
		16		LT16EL24UN	-	24	-	-	-	.027	0,7	.031	0,8		●	
		16	LT16ER20UN		-	20	-	-	-	.031	0,8	.035	0,9	●	●	
		16		LT16EL20UN	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16ER18UN		-	18	-	-	-	.031	0,8	.039	1,0	●	●	
		16		LT16EL18UN	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16ER16UN		-	16	-	-	-	.035	0,9	.043	1,1	●	●	
		16		LT16EL16UN	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16ER14UN		-	14	-	-	-	.039	1,0	.047	1,2	●	●	
		16		LT16EL14UN	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16ER12UN		-	12	-	-	-	.043	1,1	.055	1,4	●	●	
		16		LT16EL12UN	-	12	-	-	-	.043	1,1	.055	1,4		●	
		16	LT16ER10UN		-	10	-	-	-	.043	1,1	.059	1,5		●	
		16		LT16EL10UN	-	10	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16ER8UN		-	8	-	-	-	.047	1,2	.063	1,6		●	
		16		LT16EL8UN	-	8	-	-	-	.047	1,2	.063	1,6		●	
LT-NR-UNCB	American UN-Internal 	11	LT11NR36UNCB		-	36	-	-	-	.043	1,1	.020	0,5		●	
		11	LT11NR32UNCB		-	32	-	-	-	.047	1,2	.020	0,5		●	
		11	LT11NR28UNCB		-	28	-	-	-	.024	0,6	.031	0,8		●	
		11	LT11NR24UNCB		-	24	-	-	-	.028	0,7	.031	0,8		●	
		11	LT11NR20UNCB		-	20	-	-	-	.024	0,6	.031	0,8		●	
		11	LT11NR18UNCB		-	18	-	-	-	.024	0,6	.031	0,8		●	
		11	LT11NR16UNCB		-	16	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR20UNCB		-	20	-	-	-	.028	0,7	.024	0,6		●	
		16	LT16NR18UNCB		-	18	-	-	-	.024	0,6	.031	0,8		●	
		16	LT16NR16UNCB		-	16	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR14UNCB		-	14	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR12UNCB		-	12	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR10UNCB		-	10	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR8UNCB		-	8	-	-	-	.043	1,1	.059	1,5		●	

Order example:
Catalog number: LT16ER32UNCB
Insert grade: KC5010

LT Threading Inserts



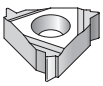
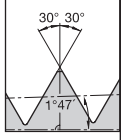
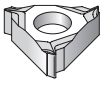
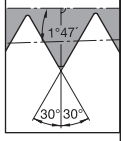
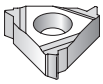
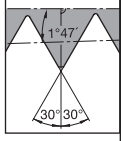
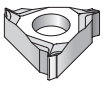
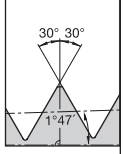
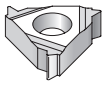
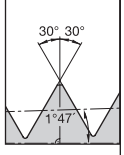
		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-NR-UNK 	**American UN-Internal** 	11	LT11NR24UNK		-	24	-	-	-	.028	0,7	.031	0,8			●
		11	LT11NR20UNK		-	20	-	-	-	.028	0,7	.031	0,8			●
		11	LT11NR18UNK		-	18	-	-	-	.028	0,7	.031	0,8			●
		16	LT16NR16UNK		-	16	-	-	-	.035	0,9	.043	1,1			●
		16	LT16NR14UNK		-	14	-	-	-	.047	1,2	.059	1,5			●
		16	LT16NR12UNK		-	12	-	-	-	.043	1,1	.055	1,4			●
		16	LT16NR8UNK		-	8	-	-	-	.051	1,3	.059	1,5			●
LT-NR/L-UN 	**American UN-Internal** 	11	LT11NR44UN		-	44	-	-	-	.024	0,6	.024	0,6		●	
		11		LT11NL44UN	-	44	-	-	-	.024	0,6	.024	0,6		●	
		11	LT11NR40UN		-	40	-	-	-	.024	0,6	.024	0,6		●	
		11		LT11NL40UN	-	40	-	-	-	.024	0,6	.024	0,6		●	
		11	LT11NR36UN		-	36	-	-	-	.024	0,6	.024	0,6		●	
		11		LT11NL36UN	-	36	-	-	-	.024	0,6	.024	0,6		●	
		11	LT11NR32UN		-	32	-	-	-	.024	0,6	.024	0,6		●	
		11		LT11NL32UN	-	32	-	-	-	.024	0,6	.024	0,6		●	
		11	LT11NR28UN		-	28	-	-	-	.024	0,6	.027	0,7		●	
		11		LT11NL28UN	-	28	-	-	-	.024	0,6	.027	0,7		●	
		11	LT11NR24UN		-	24	-	-	-	.027	0,7	.031	0,8		●	
		11		LT11NL24UN	-	24	-	-	-	.027	0,7	.031	0,8		●	
		11	LT11NR20UN		-	20	-	-	-	.031	0,8	.035	0,9		●	
		11		LT11NL20UN	-	20	-	-	-	.031	0,8	.035	0,9		●	
		11	LT11NR18UN		-	18	-	-	-	.031	0,8	.039	1,0		●	
		11		LT11NL18UN	-	18	-	-	-	.031	0,8	.039	1,0		●	
		11	LT11NR16UN		-	16	-	-	-	.035	0,9	.043	1,1	●	●	
		11		LT11NL16UN	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR48UN		-	48	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16NL48UN	-	48	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16NR40UN		-	40	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16NL40UN	-	40	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16NR36UN		-	36	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16NL36UN	-	36	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16NR32UN		-	32	-	-	-	.024	0,6	.024	0,6		●	
		16		LT16NL32UN	-	32	-	-	-	.024	0,6	.024	0,6		●	
		16	LT16NR28UN		-	28	-	-	-	.024	0,6	.027	0,7		●	
		16		LT16NL28UN	-	28	-	-	-	.024	0,6	.027	0,7		●	
		16	LT16NR24UN		-	24	-	-	-	.027	0,7	.031	0,8		●	
		16		LT16NL24UN	-	24	-	-	-	.027	0,7	.031	0,8		●	
		16	LT16NR20UN		-	20	-	-	-	.031	0,8	.035	0,9		●	
		16		LT16NL20UN	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16NR18UN		-	18	-	-	-	.031	0,8	.039	1,0		●	
		16		LT16NL18UN	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR16UN		-	16	-	-	-	.035	0,9	.043	1,1		●	
		16		LT16NL16UN	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR14UN		-	14	-	-	-	.035	0,9	.047	1,2		●	
		16		LT16NL14UN	-	14	-	-	-	.035	0,9	.047	1,2		●	
		16	LT16NR12UN		-	12	-	-	-	.043	1,1	.055	1,4	●	●	
		16		LT16NL12UN	-	12	-	-	-	.043	1,1	.055	1,4		●	
		16	LT16NR10UN		-	10	-	-	-	.043	1,1	.059	1,5		●	
		16		LT16NL10UN	-	10	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR8UN		-	8	-	-	-	.043	1,1	.059	1,5	●	●	
		16		LT16NL8UN	-	8	-	-	-	.043	1,1	.059	1,5		●	

Order example:
Catalog number: LT11NR24UNK
Insert grade: KC5025

		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-ER/L-UNJ	UNJ-External	16	LT16ER32UNJ		-	32	-	-	-	.024	0,6	.027	0,7		●	
		16		LT16EL32UNJ	-	32	-	-	-	.024	0,6	.027	0,7		●	
		16	LT16ER28UNJ		-	28	-	-	-	.027	0,7	.027	0,7		●	
		16		LT16EL28UNJ	-	28	-	-	-	.027	0,7	.027	0,7		●	
		16	LT16ER24UNJ		-	24	-	-	-	.027	0,7	.031	0,8		●	
		16		LT16EL24UNJ	-	24	-	-	-	.027	0,7	.031	0,8		●	
		16	LT16ER20UNJ		-	20	-	-	-	.031	0,8	.035	0,9	●	●	
		16		LT16EL20UNJ	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16ER18UNJ		-	18	-	-	-	.031	0,8	.039	1,0	●	●	
		16		LT16EL18UNJ	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16ER16UNJ		-	16	-	-	-	.035	0,9	.043	1,1	●	●	
		16		LT16EL16UNJ	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16ER14UNJ		-	14	-	-	-	.039	1,0	.047	1,2	●	●	
		16		LT16EL14UNJ	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16ER12UNJ		-	12	-	-	-	.043	1,1	.051	1,3	●	●	
		16		LT16EL12UNJ	-	12	-	-	-	.043	1,1	.051	1,3		●	
		16	LT16ER10UNJ		-	10	-	-	-	.047	1,2	.059	1,5		●	
		16		LT16EL10UNJ	-	10	-	-	-	.047	1,2	.059	1,5		●	
		16	LT16ER8UNJ		-	8	-	-	-	.047	1,2	.063	1,6		●	
		16		LT16EL8UNJ	-	8	-	-	-	.047	1,2	.063	1,6		●	
LT-NR/L-UNJ	UNJ-Internal	11	LT11NR20UNJ		-	20	-	-	-	.031	0,8	.035	0,9		●	
		11		LT11NL20UNJ	-	20	-	-	-	.031	0,8	.035	0,9		●	
		11	LT11NR18UNJ		-	18	-	-	-	.031	0,8	.039	1,0		●	
		11		LT11NL18UNJ	-	18	-	-	-	.031	0,8	.039	1,0		●	
		11	LT11NR16UNJ		-	16	-	-	-	.035	0,9	.043	1,1		●	
		11		LT11NL16UNJ	-	16	-	-	-	.035	0,9	.043	1,1		●	
		11	LT11NR14UNJ		-	14	-	-	-	.039	1,0	.047	1,2		●	
		11		LT11NL14UNJ	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16NR32UNJ		-	32	-	-	-	.024	0,6	.028	0,7		●	
		16		LT16NL32UNJ	-	32	-	-	-	.024	0,6	.028	0,7		●	
		16	LT16NR28UNJ		-	28	-	-	-	.028	0,7	.028	0,7		●	
		16		LT16NL28UNJ	-	28	-	-	-	.028	0,7	.028	0,7		●	
		16	LT16NR24UNJ		-	24	-	-	-	.028	0,7	.031	0,8		●	
		16		LT16NL24UNJ	-	24	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16NR20UNJ		-	20	-	-	-	.031	0,8	.035	0,9		●	
		16		LT16NL20UNJ	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16NR18UNJ		-	18	-	-	-	.031	0,8	.039	1,0		●	
		16		LT16NL18UNJ	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR16UNJ		-	16	-	-	-	.035	0,9	.043	1,1		●	
		16		LT16NL16UNJ	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR14UNJ		-	14	-	-	-	.039	1,0	.047	1,2		●	
		16		LT16NL14UNJ	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16NR12UNJ		-	12	-	-	-	.043	1,1	.051	1,3		●	
		16		LT16NL12UNJ	-	12	-	-	-	.043	1,1	.051	1,3		●	
		16	LT16NR10UNJ		-	10	-	-	-	.047	1,2	.059	1,5		●	
		16		LT16NL10UNJ	-	10	-	-	-	.047	1,2	.059	1,5		●	
		16	LT16NR8UNJ		-	8	-	-	-	.047	1,2	.063	1,6		●	
		16		LT16NL8UNJ	-	8	-	-	-	.047	1,2	.063	1,6		●	
LT-ER-NPTCB	NPT-External	16	LT16ER14NPTCB		-	14	.75	-	-	.043	1,1	.059	1,5	●	●	

Order example:
Catalog number: LT16ER32UNJ
Insert grade: KC5025

LT Threading Inserts

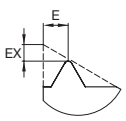
			Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-ER/L-NPT	NPT-External	 	16	LT16ER27NPT		-	27	.75	-	-	.027	0,7	.031	0,8		●	
			16		LT16EL27NPT	-	27	.75	-	-	.027	0,7	.031	0,8		●	
			16	LT16ER18NPT		-	18	.75	-	-	.031	0,8	.039	1,0	●	●	
			16		LT16EL18NPT	-	18	.75	-	-	.031	0,8	.039	1,0		●	
			16	LT16ER14NPT		-	14	.75	-	-	.035	0,9	.047	1,2	●	●	
			16		LT16EL14NPT	-	14	.75	-	-	.035	0,9	.047	1,2		●	
			16	LT16ER115NPT		-	11.5	.75	-	-	.043	1,1	.059	1,5	●	●	
			16		LT16EL115NPT	-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
			16	LT16ER8NPT		-	8	.75	-	-	.051	1,3	.071	1,8		●	
			16		LT16EL8NPT	-	8	.75	-	-	.051	1,3	.071	1,8		●	
LT-NR-NPTCB	NPT-Internal	 	16	LT16NR14NPTCB		-	14	.75	-	-	.053	1,4	.047	1,2		●	
			16	LT16NR115NPTCB		-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
LT-NR/L-NPT	NPT-Internal	 	11	LT11NR27NPT		-	27	.75	-	-	.027	0,7	.031	0,8		●	
			11		LT11NL27NPT	-	27	.75	-	-	.027	0,7	.031	0,8		●	
			11	LT11NR18NPT		-	18	.75	-	-	.031	0,8	.039	1,0		●	
			11		LT11NL18NPT	-	18	.75	-	-	.031	0,8	.039	1,0		●	
			11	LT11NR14NPT		-	14	.75	-	-	.031	0,8	.039	1,0	●	●	
			11		LT11NL14NPT	-	14	.75	-	-	.031	0,8	.039	1,0		●	
			16	LT16NR27NPT		-	27	.75	-	-	.027	0,7	.031	0,8		●	
			16		LT16NL27NPT	-	27	.75	-	-	.027	0,7	.031	0,8		●	
			16	LT16NR18NPT		-	18	.75	-	-	.031	0,8	.039	1,0		●	
			16		LT16NL18NPT	-	18	.75	-	-	.031	0,8	.039	1,0		●	
			16	LT16NR14NPT		-	14	.75	-	-	.035	0,9	.047	1,2	●	●	
			16		LT16NL14NPT	-	14	.75	-	-	.035	0,9	.047	1,2		●	
			16	LT16NR115NPT		-	11.5	.75	-	-	.043	1,1	.059	1,5	●	●	
			16		LT16NL115NPT	-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
			16	LT16NR8NPT		-	8	.75	-	-	.051	1,3	.071	1,8		●	
			16		LT16NL8NPT	-	8	.75	-	-	.051	1,3	.071	1,8		●	
LT-ER-NPTFCB	NPTF-External	 	16	LT16ER115NPTFCB		-	11.5	.75	-	-	.043	1,1	.059	1,5	●	●	
LT-ER/L-NPTF	NPTF-External	 	16	LT16ER14NPTF		-	14	.75	-	-	.035	0,9	.047	1,2		●	
			16		LT16EL14NPTF	-	14	.75	-	-	.035	0,9	.047	1,2		●	
			16	LT16ER115NPTF		-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
			16		LT16EL115NPTF	-	11.5	.75	-	-	.043	1,1	.059	1,5		●	

Order example:
Catalog number: LT16ER27NPT
Insert grade: KC5025

		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-NR/L-NPTF	NPTF-Internal	11	LT11NR14NPTF		-	14	.75	-	-	.031	0,8	.039	1,0		●	
		11		LT11NL14NPTF	-	14	.75	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR14NPTF		-	14	.75	-	-	.035	0,9	.047	1,2		●	
		16		LT16NL14NPTF	-	14	.75	-	-	.035	0,9	.047	1,2		●	
		16	LT16NR115NPTF		-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
		16		LT16NL115NPTF	-	11.5	.75	-	-	.043	1,1	.059	1,5		●	
LT-ER/L-55	Partial Profile 55° External	16	LT16ERA55		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16		LT16ELA55	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16ERAG55		0,50-3,00	48-8	-	.003	0,08	.047	1,2	.067	1,7	●	●	
		16		LT16ELAG55	0,50-3,00	48-8	-	.003	0,08	.047	1,2	.067	1,7		●	
		16	LT16ERG55		1,75-3,00	14-8	-	.008	0,20	.047	1,2	.067	1,7		●	
		16		LT16ELG55	1,75-3,00	14-8	-	.008	0,20	.047	1,2	.067	1,7		●	
		22	LT22ERN55		3,50-5,00	7-5	-	.017	0,43	.067	1,7	.098	2,5		●	
		22		LT22ELN55	3,50-5,00	7-5	-	.017	0,43	.067	1,7	.098	2,5		●	
LT-NR/L-55	Partial Profile 55° Internal	11	LT11NRA55		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		11		LT11NLA55	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16NRA55		0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16		LT16NLA55	0,50-1,50	48-16	-	.002	0,05	.031	0,8	.035	0,9		●	
		16	LT16NRAG55		0,50-3,00	48-8	-	.003	0,07	.047	1,2	.067	1,7		●	
		16		LT16NLAG55	0,50-3,00	48-8	-	.003	0,07	.047	1,2	.067	1,7		●	
		16	LT16NRG55		1,75-3,00	14-8	-	.008	0,21	.047	1,2	.067	1,7		●	
		16		LT16NLG55	1,75-3,00	14-8	-	.008	0,21	.047	1,2	.067	1,7		●	
		22	LT22NRN55		3,50-5,00	7-5	-	.017	0,43	.067	1,7	.098	2,5		●	
		22		LT22NLN55	3,50-5,00	7-5	-	.017	0,43	.067	1,7	.098	2,5		●	
LT-ER-WCB	Whitworth BSW, BSP-External	16	LT16ER14WCB		-	14	-	-	-	.051	1,3	.059	1,5	●	●	
		16	LT16ER11WCB		-	11	-	-	-	.051	1,3	.059	1,5	●	●	
LT-ER/L-W	Whitworth BSW, BSP-External	16	LT16ER28W		-	28	-	-	-	.024	0,6	.027	0,7		●	
		16		LT16EL28W	-	28	-	-	-	.024	0,6	.027	0,7		●	
		16	LT16ER24W		-	24	-	-	-	.028	0,7	.031	0,8		●	
		16		LT16EL24W	-	24	-	-	-	.028	0,7	.031	0,8		●	
		16	LT16ER20W		-	20	-	-	-	.031	0,8	.035	0,9		●	
		16		LT16EL20W	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16ER19W		-	19	-	-	-	.031	0,8	.039	1,0	●	●	
		16		LT16EL19W	-	19	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16ER18W		-	18	-	-	-	.031	0,8	.039	1,0		●	
		16		LT16EL18W	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16ER16W		-	16	-	-	-	.035	0,9	.043	1,1		●	
		16		LT16EL16W	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16ER14W		-	14	-	-	-	.039	1,0	.047	1,2	●	●	
		16		LT16EL14W	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16ER12W		-	12	-	-	-	.043	1,1	.055	1,4		●	
		16		LT16EL12W	-	12	-	-	-	.043	1,1	.055	1,4		●	
		16	LT16ER11W		-	11	-	-	-	.043	1,1	.059	1,5	●	●	

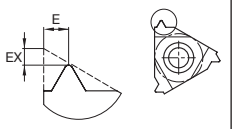
Order example:
Catalog number: LT11NR14NPTF
Insert grade: KC5025

LT Threading Inserts



		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-ER/L-W	Whitworth BSW, BSP-External	16		LT16EL11W	-	11	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16ER10W		-	10	-	-	-	.043	1,1	.059	1,5		●	
		16		LT16EL10W	-	10	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16ER9W		-	9	-	-	-	.047	1,2	.067	1,7		●	
		16		LT16EL9W	-	9	-	-	-	.047	1,2	.067	1,7		●	
		16	LT16ER8W		-	8	-	-	-	.047	1,2	.059	1,5		●	
		16		LT16EL8W	-	8	-	-	-	.047	1,2	.059	1,5		●	
		22	LT22ER7W		-	7	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22EL7W	-	7	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22ER6W		-	6	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22EL6W	-	6	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22ER5W		-	5	-	-	-	.067	1,7	.094	2,4		●	
		22		LT22EL5W	-	5	-	-	-	.067	1,7	.094	2,4		●	
LT-NR-WCB	Whitworth BSW, BSP-Internal	16	LT16NR14WCB		-	14	-	-	-	.051	1,3	.059	1,5		●	
		16	LT16NR11WCB		-	11	-	-	-	.051	1,3	.059	1,5		●	
LT-NR/L-W	Whitworth BSW, BSP-Internal	11	LT11NR19W		-	19	-	-	-	.031	0,8	.039	1,0		●	
		11		LT11NL19W	-	19	-	-	-	.031	0,8	.039	1,0		●	
		11	LT11NR14W		-	14	-	-	-	.035	0,9	.043	1,1		●	
		11		LT11NL14W	-	14	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR20W		-	20	-	-	-	.031	0,8	.035	0,9		●	
		16		LT16NL20W	-	20	-	-	-	.031	0,8	.035	0,9		●	
		16	LT16NR19W		-	19	-	-	-	.031	0,8	.039	1,0		●	
		16		LT16NL19W	-	19	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR18W		-	18	-	-	-	.031	0,8	.039	1,0		●	
		16		LT16NL18W	-	18	-	-	-	.031	0,8	.039	1,0		●	
		16	LT16NR16W		-	16	-	-	-	.035	0,9	.043	1,1		●	
		16		LT16NL16W	-	16	-	-	-	.035	0,9	.043	1,1		●	
		16	LT16NR14W		-	14	-	-	-	.039	1,0	.047	1,2		●	
		16		LT16NL14W	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16NR12W		-	12	-	-	-	.043	1,1	.055	1,4		●	
		16		LT16NL12W	-	12	-	-	-	.043	1,1	.055	1,4		●	
		16	LT16NR11W		-	11	-	-	-	.043	1,1	.059	1,5	●	●	
		16		LT16NL11W	-	11	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR10W		-	10	-	-	-	.043	1,1	.059	1,5		●	
		16		LT16NL10W	-	10	-	-	-	.043	1,1	.059	1,5		●	
		16	LT16NR9W		-	9	-	-	-	.047	1,2	.067	1,7		●	
		16		LT16NL9W	-	9	-	-	-	.047	1,2	.067	1,7		●	
		16	LT16NR8W		-	8	-	-	-	.047	1,2	.059	1,5		●	
		16		LT16NL8W	-	8	-	-	-	.047	1,2	.059	1,5		●	
		22	LT22NR7W		-	7	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22NL7W	-	7	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22NR6W		-	6	-	-	-	.063	1,6	.090	2,3		●	
		22		LT22NL6W	-	6	-	-	-	.063	1,6	.090	2,3		●	
		22	LT22NR5W		-	5	-	-	-	.067	1,7	.094	2,4		●	
		22		LT22NL5W	-	5	-	-	-	.067	1,7	.094	2,4		●	

Order example:
Catalog number: LT16EL11W
Insert grade: KC5025

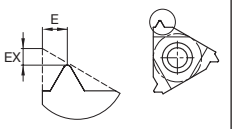
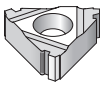
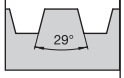
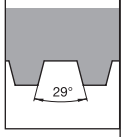
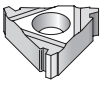
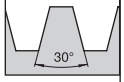
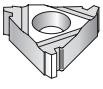
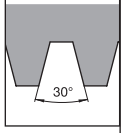
		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
																
LT-ER/L-BSPT	BSPT-External	16	LT16ER14BSPT		-	14	.75	-	-	.039	1,0	.047	1,2		●	
		16		LT16EL14BSPT	-	14	.75	-	-	.039	1,0	.047	1,2		●	
		16	LT16ER11BSPT		-	11	.75	-	-	.043	1,1	.059	1,5		●	
		16		LT16EL11BSPT	-	11	.75	-	-	.043	1,1	.059	1,5		●	
LT-NR/L-BSPT	BSPT-Internal	11	LT11NR14BSPT		-	14	.75	-	-	.035	0,9	.039	1,0		●	
		11		LT11NL14BSPT	-	14	.75	-	-	.035	0,9	.039	1,0		●	
		16	LT16NR14BSPT		-	14	.75	-	-	.039	1,0	.047	1,2		●	
		16		LT16NL14BSPT	-	14	.75	-	-	.039	1,0	.047	1,2		●	
		16	LT16NR11BSPT		-	11	.75	-	-	.043	1,1	.059	1,5		●	
		16		LT16NL11BSPT	-	11	.75	-	-	.043	1,1	.059	1,5		●	
LT-ER/L-API	API Rotary Shoulder Connections-External	22	LT22ER5API403		-	5	3.00	-	-	.071	1,8	.102	2,6	●	●	
		22		LT22EL5API403	-	5	3.00	-	-	.071	1,8	.102	2,6		●	
		22	LT22ER4API502		-	4	2.00	-	-	.079	2,0	.114	2,9	●	●	
		22		LT22EL4API502	-	4	2.00	-	-	.079	2,0	.114	2,9		●	
		22	LT22ER4API503		-	4	3.00	-	-	.079	2,0	.114	2,9	●	●	
		22		LT22EL4API503	-	4	3.00	-	-	.079	2,0	.114	2,9		●	
		22	LT22ER4API382		-	4	2.00	-	-	.083	2,1	.110	2,8		●	
		22		LT22EL4API382	-	4	2.00	-	-	.083	2,1	.110	2,8		●	
		22	LT22ER4API383		-	4	3.00	-	-	.083	2,1	.110	2,8		●	
		22		LT22EL4API383	-	4	3.00	-	-	.083	2,1	.110	2,8		●	
α = 1/2 arctan (tpf/12)																
LT-NR/L-API	API Rotary Shoulder Connections-Internal	22	LT22NR5API403		-	5	3.00	-	-	.071	1,8	.102	2,6		●	
		22		LT22NL5API403	-	5	3.00	-	-	.071	1,8	.102	2,6		●	
		22	LT22NR4API502		-	4	2.00	-	-	.083	2,1	.122	3,1		●	
		22		LT22NL4API502	-	4	2.00	-	-	.083	2,1	.122	3,1		●	
		22	LT22NR4API503		-	4	3.00	-	-	.080	2,0	.114	2,9		●	
		22		LT22NL4API503	-	4	3.00	-	-	.080	2,0	.114	2,9		●	
		22	LT22NR4API382		-	4	2.00	-	-	.083	2,1	.110	2,8		●	
		22		LT22NL4API382	-	4	2.00	-	-	.083	2,1	.110	2,8		●	
		22	LT22NR4API383		-	4	3.00	-	-	.083	2,1	.110	2,8		●	
		22		LT22NL4API383	-	4	3.00	-	-	.083	2,1	.110	2,8		●	
α = 1/2 arctan (tpf/12)																
LT-ER/L-BUT	API Buttress Casing-External	22	LT22ER5BUT75		-	5	.75	-	-	.122	3,1	.075	1,9		●	
		22		LT22EL5BUT75	-	5	.75	-	-	.122	3,1	.075	1,9		●	
		22	LT22ER5BUT1		-	5	1.00	-	-	.122	3,1	.075	1,9		●	
		22		LT22EL5BUT1	-	5	1.00	-	-	.122	3,1	.075	1,9		●	
α = 1/2 arctan (tpf/12)																

Order example:
Catalog number: LT16ER14BSPT
Insert grade: KC5025

LT Threading Inserts

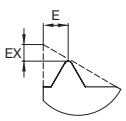
		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-NR/L-BUT	API Buttress Casing-Internal	22	LT22NR5BUT75		-	5	.75	-	-	.110	2,8	.075	1,9		●	
		22		LT22NL5BUT75	-	5	.75	-	-	.110	2,8	.075	1,9		●	
		22	LT22NR5BUT1		-	5	1.00	-	-	.110	2,8	.075	1,9		●	
		22		LT22NL5BUT1	-	5	1.00	-	-	.110	2,8	.075	1,9		●	
α = 1/2 arctan (tpf/12)																
LT-ER/L-APIRD	API Round-External	16	LT16ER10APIRD		-	10	.75	-	-	.047	1,2	.055	1,4		●	
		16		LT16EL10APIRD	-	10	.75	-	-	.047	1,2	.055	1,4		●	
		16	LT16ER8APIRD		-	8	.75	-	-	.051	1,3	.059	1,5		●	
		16		LT16EL8APIRD	-	8	.75	-	-	.051	1,3	.059	1,5		●	
α = 1/2 arctan (tpf/12)																
LT-NR/L-APIRD	API Round-Internal	16	LT16NR10APIRD		-	10	.75	-	-	.047	1,2	.055	1,4		●	
		16		LT16NL10APIRD	-	10	.75	-	-	.047	1,2	.055	1,4		●	
		16	LT16NR8APIRD		-	8	.75	-	-	.051	1,3	.059	1,5		●	
		16		LT16NL8APIRD	-	8	.75	-	-	.051	1,3	.059	1,5		●	
LT-ER/L-ACME	Acme External	16	LT16ER16ACME		-	16	-	-	-	.039	1,0	.043	1,1		●	
		16		LT16EL16ACME	-	16	-	-	-	.039	1,0	.043	1,1		●	
		16	LT16ER14ACME		-	14	-	-	-	.039	1,0	.047	1,2		●	
		16		LT16EL14ACME	-	14	-	-	-	.039	1,0	.047	1,2		●	
		16	LT16ER12ACME		-	12	-	-	-	.043	1,1	.047	1,2		●	
		16		LT16EL12ACME	-	12	-	-	-	.043	1,1	.047	1,2		●	
		16	LT16ER10ACME		-	10	-	-	-	.051	1,3	.055	1,4		●	
		16		LT16EL10ACME	-	10	-	-	-	.051	1,3	.055	1,4		●	
		16	LT16ER8ACME		-	8	-	-	-	.055	1,4	.059	1,5		●	
		16		LT16EL8ACME	-	8	-	-	-	.055	1,4	.059	1,5		●	
		22	LT22ER6ACME		-	6	-	-	-	.071	1,8	.083	2,1		●	
		22		LT22EL6ACME	-	6	-	-	-	.071	1,8	.083	2,1		●	
		22	LT22ER5ACME		-	5	-	-	-	.079	2,0	.090	2,3		●	
		22		LT22EL5ACME	-	5	-	-	-	.079	2,0	.090	2,3		●	
LT-NR/L-ACME	Acme Internal	16	LT16NR16ACME		-	16	-	-	-	.039	1,0	.043	1,1		●	
		16		LT16NL16ACME	-	16	-	-	-	.039	1,0	.043	1,1		●	
		16	LT16NR14ACME		-	14	-	-	-	.043	1,1	.047	1,2		●	
		16		LT16NL14ACME	-	14	-	-	-	.043	1,1	.047	1,2		●	
		16	LT16NR12ACME		-	12	-	-	-	.047	1,2	.051	1,3		●	
		16		LT16NL12ACME	-	12	-	-	-	.047	1,2	.051	1,3		●	
		16	LT16NR10ACME		-	10	-	-	-	.047	1,2	.051	1,3		●	
		16		LT16NL10ACME	-	10	-	-	-	.047	1,2	.051	1,3		●	
		16	LT16NR8ACME		-	8	-	-	-	.055	1,4	.059	1,5		●	
		16		LT16NL8ACME	-	8	-	-	-	.055	1,4	.059	1,5		●	
		22	LT22NR6ACME		-	6	-	-	-	.071	1,8	.083	2,1		●	
		22		LT22NL6ACME	-	6	-	-	-	.071	1,8	.083	2,1		●	
		22	LT22NR5ACME		-	5	-	-	-	.079	2,0	.090	2,3		●	
		22		LT22NL5ACME	-	5	-	-	-	.079	2,0	.090	2,3		●	

Order example:
Catalog number: LT22NR5BUT75
Insert grade: KC5025

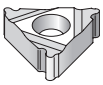
		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
																
	Stub Acme- External 	16	LT16ER16STACME		-	16	-	-	-	.039	1,0	.039	1,0		●	
		16		LT16EL16STACME	-	16	-	-	-	.039	1,0	.039	1,0		●	
		16	LT16ER14STACME		-	14	-	-	-	.043	1,1	.043	1,1		●	
		16		LT16EL14STACME	-	14	-	-	-	.043	1,1	.043	1,1		●	
		16	LT16ER12STACME		-	12	-	-	-	.047	1,2	.047	1,2		●	
		16		LT16EL12STACME	-	12	-	-	-	.047	1,2	.047	1,2		●	
		16	LT16ER10STACME		-	10	-	-	-	.047	1,2	.051	1,3		●	
		16		LT16EL10STACME	-	10	-	-	-	.047	1,2	.051	1,3		●	
		16	LT16ER8STACME		-	8	-	-	-	.055	1,4	.059	1,5		●	
		16		LT16EL8STACME	-	8	-	-	-	.055	1,4	.059	1,5		●	
		16	LT16ER6STACME		-	6	-	-	-	.067	1,7	.071	1,8		●	
		16		LT16EL6STACME	-	6	-	-	-	.067	1,7	.071	1,8		●	
		22	LT22ER5STACME		-	5	-	-	-	.083	2,1	.090	2,3		●	
		22		LT22EL5STACME	-	5	-	-	-	.083	2,1	.090	2,3		●	
	Stub Acme- Internal 	16	LT16NR16STACME		-	16	-	-	-	.039	1,0	.039	1,0		●	
		16		LT16NL16STACME	-	16	-	-	-	.039	1,0	.039	1,0		●	
		16	LT16NR14STACME		-	14	-	-	-	.043	1,1	.043	1,1		●	
		16		LT16NL14STACME	-	14	-	-	-	.043	1,1	.043	1,1		●	
		16	LT16NR12STACME		-	12	-	-	-	.043	1,1	.047	1,2		●	
		16		LT16NL12STACME	-	12	-	-	-	.043	1,1	.047	1,2		●	
		16	LT16NR10STACME		-	10	-	-	-	.047	1,2	.051	1,3		●	
		16		LT16NL10STACME	-	10	-	-	-	.047	1,2	.051	1,3		●	
		16	LT16NR8STACME		-	8	-	-	-	.055	1,4	.059	1,5		●	
		16		LT16NL8STACME	-	8	-	-	-	.055	1,4	.059	1,5		●	
		16	LT16NR6STACME		-	6	-	-	-	.067	1,7	.071	1,8		●	
		16		LT16NL6STACME	-	6	-	-	-	.067	1,7	.071	1,8		●	
		22	LT22NR5STACME		-	5	-	-	-	.083	2,1	.090	2,3		●	
		22		LT22NL5STACME	-	5	-	-	-	.083	2,1	.090	2,3		●	
	Trapez- External 	16	LT16ER15TR		1,50	-	-	-	-	.039	1,0	.043	1,1		●	
		16		LT16EL15TR	1,50	-	-	-	-	.039	1,0	.043	1,1		●	
		16	LT16ER2TR		2,00	-	-	-	-	.043	1,1	.051	1,3		●	
		16		LT16EL2TR	2,00	-	-	-	-	.043	1,1	.051	1,3		●	
		16	LT16ER3TR		3,00	-	-	-	-	.051	1,3	.059	1,5		●	
		16		LT16EL3TR	3,00	-	-	-	-	.051	1,3	.059	1,5		●	
		22	LT22ER4TR		4,00	-	-	-	-	.067	1,7	.075	1,9		●	
		22		LT22EL4TR	4,00	-	-	-	-	.067	1,7	.075	1,9		●	
		22	LT22ER5TR		5,00	-	-	-	-	.083	2,1	.098	2,5		●	
		22		LT22EL5TR	5,00	-	-	-	-	.083	2,1	.098	2,5		●	
	Trapez- Internal 	16	LT16NR15TR		1,50	-	-	-	-	.039	1,0	.043	1,1		●	
		16		LT16NL15TR	1,50	-	-	-	-	.039	1,0	.043	1,1		●	
		16	LT16NR2TR		2,00	-	-	-	-	.043	1,1	.051	1,3		●	
		16		LT16NL2TR	2,00	-	-	-	-	.043	1,1	.051	1,3		●	
		16	LT16NR3TR		3,00	-	-	-	-	.051	1,3	.059	1,5		●	
		16		LT16NL3TR	3,00	-	-	-	-	.051	1,3	.059	1,5		●	
		22	LT22NR4TR		4,00	-	-	-	-	.067	1,7	.075	1,9		●	
		22		LT22NL4TR	4,00	-	-	-	-	.067	1,7	.075	1,9		●	
		22	LT22NR5TR		5,00	-	-	-	-	.083	2,1	.098	2,5		●	
		22		LT22NL5TR	5,00	-	-	-	-	.083	2,1	.098	2,5		●	

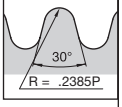
Order example:
Catalog number: LT16ER16STACME
Insert grade: KC5025

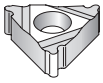
LT Threading Inserts

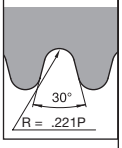


		Insert size	Catalog number Right hand	Catalog number Left hand	P pitch (mm)	TPI	TPF	RC inch	RC mm	EX inch	EX mm	E inch	E mm	KC5010	KC5025	KENNA UNIVERSAL KU25T
LT-ER/L-RD	Round-External	16	LT16ER10RD		-	10	-	-	-	.043	1,1	.047	1,2		●	
		16		LT16EL10RD	-	10	-	-	-	.043	1,1	.047	1,2		●	
		16	LT16ER8RD		-	8	-	-	-	.055	1,4	.051	1,3		●	
		16		LT16EL8RD	-	8	-	-	-	.055	1,4	.051	1,3		●	
		22	LT22ER6RD		-	6	-	-	-	.059	1,5	.067	1,7		●	
		22		LT22EL6RD	-	6	-	-	-	.059	1,5	.067	1,7		●	
LT-NR/L-RD	Round-Internal	16	LT16NR10RD		-	10	-	-	-	.043	1,1	.047	1,2		●	
		16		LT16NL10RD	-	10	-	-	-	.043	1,1	.047	1,2		●	
		16	LT16NR8RD		-	8	-	-	-	.055	1,4	.055	1,4		●	
		16		LT16NL8RD	-	8	-	-	-	.055	1,4	.055	1,4		●	
		22	LT22NR6RD		-	6	-	-	-	.059	1,5	.067	1,7		●	
		22		LT22NL6RD	-	6	-	-	-	.059	1,5	.067	1,7		●	







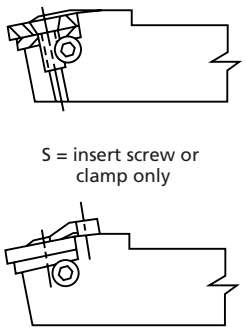


Order example:
Catalog number: LT16ER10RD
Insert grade: KC5025

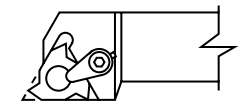
METRIC

INCH

1. Insert Style	2. Insert Holding Method	3. Tool Style	4. Hand of Tool	5. Drop Head	6. Shank Size	7. Insert Size	8. Qualified Surface and Length
L	S	AS	R	2525K	16	16	D
					16	3	

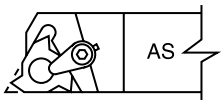


S = insert screw or clamp only

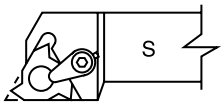


L = laydown triangle

straight shank

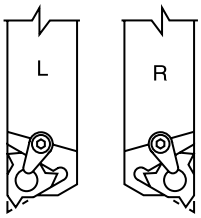


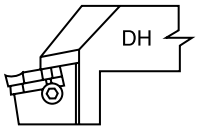
offset shank



left hand

right hand

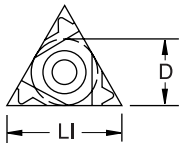




C – qualified back and end, 5" long
D – qualified back and end, 6" long
E – qualified back and end, 7" long
T – qualified back and end, 3.250" long
Q – qualified metric holder

metric:
Shank height and width in mm and holder length according to ISO standard
inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and over, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width, and the second digit the number of quarters of height, except for a toolholder 1 1/4" x 1 1/2", which is given the number 91.

Size equals number of 1/8-inch increments of IC.



inch insert size	metric insert size	D (inch)	LI (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

*NOTE: Toolholders with primary shank sizes larger than 1/2-inch or 12 mm are supplied with clamp and insert screw. Secure the insert with either the clamp **or** insert screw. **Do not use both.**

LT Threading – Shim Identification System

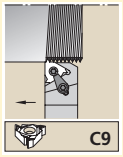
1. Shim	2. Y – Shim for LT Standard Inserts	3. E – External I – Internal	4. Insert Size	5. Shim Angle
SM	Y	E	3	2P

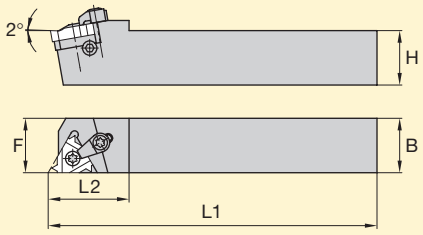
D value in 1/8ths inch

2P– 2° positive
1P– 1° positive
__– 0° neutral
1N– 1° negative
2N– 2° negative
3N– 3° negative

NOTE: For shims and shim kits, see page C61 - C63

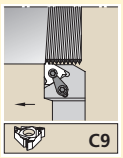
LSA

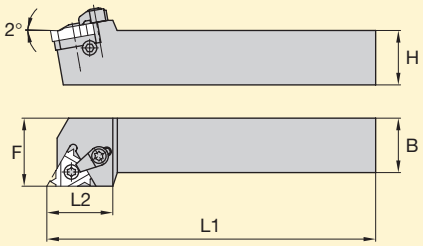




Gage Insert	Catalog number	H	B	F	L1	L2	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand												
LT16ER	**LSASR83**	.500	.500	.500	3.25	.87	**SMYE3**	**SSY3T**	T10	**-**	-	**SSA3T**	T10
LT16ER	**LSASR103**	.625	.625	.630	5.00	1.20	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16ER	**LSASR123**	.750	.750	.750	5.00	1.20	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16ER	**LSASR163**	1.000	1.000	1.000	6.00	1.20	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16ER	**LSASR203**	1.250	1.250	1.250	7.00	1.18	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22ER	**LSASR164**	1.000	1.000	1.000	6.00	1.42	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LT22ER	**LSASR204**	1.250	1.250	1.250	7.00	1.42	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
	Left hand												
LT16EL	**LSASL83**	.500	.500	.500	3.25	.87	**SMYI3**	**SSY3T**	T10	**-**	-	**SSA3T**	T10
LT16EL	**LSASL103**	.625	.625	.630	5.00	1.20	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16EL	**LSASL123**	.750	.750	.750	5.00	1.20	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16EL	**LSASL163**	1.000	1.000	1.000	6.00	1.20	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22EL	**LSASL164**	1.000	1.000	1.000	6.00	1.42	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

LSS

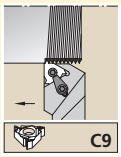


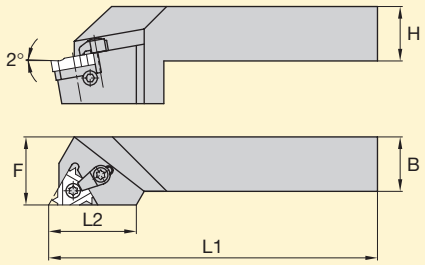


Gage Insert	Catalog number	H	B	F	L1	L2	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand												
LT16ER	**LSSR123D**	.750	.750	1.000	6.00	1.00	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16ER	**LSSR163D**	1.000	1.000	1.250	6.00	1.00	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16ER	**LSSR203D**	1.250	1.250	1.500	6.00	1.00	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22ER	**LSSR164D**	1.000	1.000	1.250	6.00	1.20	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LT22ER	**LSSR204D**	1.250	1.250	1.500	6.00	1.20	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
	Left hand												
LT16EL	**LSSL123D**	.750	.750	1.000	6.00	1.00	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16EL	**LSSL163D**	1.000	1.000	1.250	6.00	1.00	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22EL	**LSSL164D**	1.000	1.000	1.250	6.00	1.20	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

Order example:
LSASR83

LSS-DH





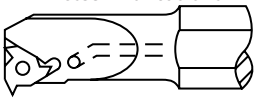
Gage Insert	Catalog number	H	B	F	L1	L2	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand												
LT16ER	**LSSRDH123C**	.750	.750	1.000	5.00	1.50	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22ER	**LSSRDH164D**	1.000	1.000	1.250	6.00	1.50	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

Order example:
LSSRDH123C

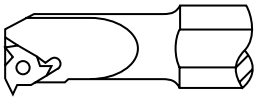
LT Threading – Boring Bar Identification System

1. Bar Type

A – steel with coolant

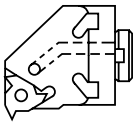


S – steel without coolant



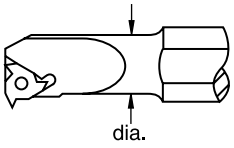
E – carbide with coolant

H – interchangeable head with coolant



S **08**

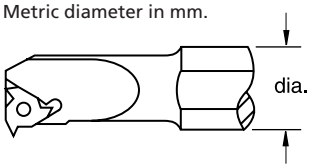
2. Primary Necked-Shank Bar Diameter



A two-digit number that indicates the primary bar diameter in 1/16-inch increments.
Metric diameter in mm.

3. Secondary (Mounting) Bar Diameter

A two-digit number that indicates the secondary bar diameter in 1/16-inch increments.
Metric diameter in mm.



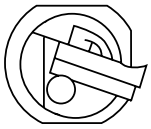
12 **L**

4. Insert Style

L – laydown triangle

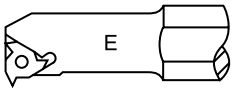
5. Insert Holding Method

S = insert screw or clamp



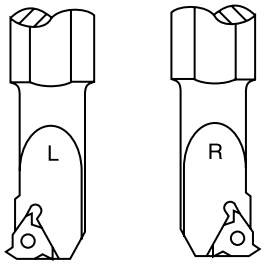
S **E**

6. Bar Style



end cutting edge mount

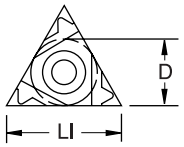
7. Hand of Bar



left hand right hand

8. Insert Size

Size equals number of 1/8-inch increments of IC.



inch insert size	metric insert size	D (inch)	LI (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

R **2**

*NOTE: Boring bars with primary bar diameters larger than 5/8-inch or 16 mm are supplied with clamp and insert screw. Secure the insert with either the clamp **or** insert screw. **Do not use both.**

LT Threading – Shim Identification System

1. Shim

SM

2. Y – Shim for LT Standard Inserts

Y

3. E – External I – Internal

E

4. Insert Size

D value in 1/8ths inch

3

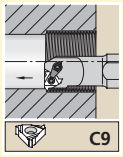
5. Shim Angle

2P– 2° positive
1P– 1° positive
__– 0° neutral
1N– 1° negative
2N– 2° negative
3N– 3° negative

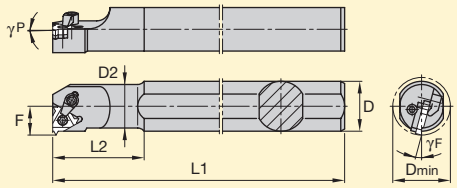
2P

NOTE: For shims and shim kits, see page C61 - C63.

S-LSE

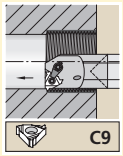


Steel shank without through coolant

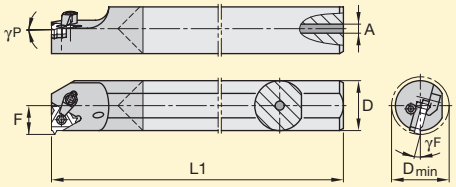


Gage Insert	Catalog number	D	Dmin	D2	F	L1	L2	A	γF°	γP°	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand																
LT11NR	**S0612LSER2**	.750	.500	.375	.280	7,00	1,00	-	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT11NR	**S0812LSER2**	.750	.650	.500	.340	7,00	1,25	-	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT16NR	**S1012LSER3**	.750	.800	.625	.460	7,00	1,50	-	-15.0	-1.5	-	-	-	-	-	**SSA3T**	T10
LT16NR	**S1212LSER3**	.750	.900	-	.510	7,00	-	-	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NR	**S1620LSER3**	1.250	1.200	1.000	.650	10,00	2,50	-	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NR	**S2020LSER3**	1.250	1.450	-	.770	10,00	-	-	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NR	**S1620LSER4**	1.250	1.250	1.000	.710	10,00	2,50	-	-15.0	-1.5	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LT22NR	**S2020LSER4**	1.250	1.500	-	.850	10,00	-	-	-15.0	-1.5	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
	Left hand																
LT11NL	**S0612LSEL2**	.750	.500	.375	.280	7,00	1,00	-	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT11NL	**S0812LSEL2**	.750	.650	.500	.340	7,00	1,25	-	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT16NL	**S1012LSEL3**	.750	.800	.625	.460	7,00	1,50	-	-15.0	-1.5	-	-	-	-	-	**SSA3T**	T10
LT16NL	**S1212LSEL3**	.750	.900	-	.510	7,00	-	-	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NL	**S1620LSEL3**	1.250	1.200	1.000	.650	10,00	2,50	-	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NL	**S1620LSEL4**	1.250	1.250	1.000	.710	10,00	2,50	-	-15.0	-1.5	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

E-LSE



Carbide shank with through coolant

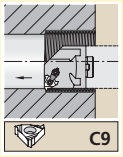


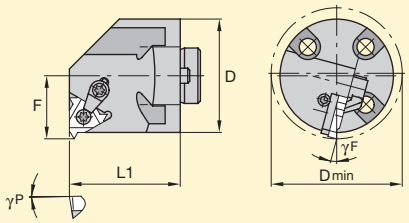
Gage Insert	Catalog number	D	Dmin	D2	F	L1	L2	A	γF°	γP°	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand																
LT11NR	**E06LSER2**	.375	.500	-	.280	6,00	-	.125	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT11NR	**E08LSER2**	.500	.650	-	.340	8,00	-	.187	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT16NR	**E10LSER3**	.625	.800	-	.460	10,00	-	.218	-15.0	-1.5	-	-	-	-	-	**SSA3T**	T10
LT16NR	**E12LSER3**	.750	.900	-	.510	10,00	-	.281	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NR	**E16LSER3**	1.000	1.200	-	.650	12,00	-	.312	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NR	**E16LSER4**	1.000	1.250	-	.710	12,00	-	.312	-15.0	-1.5	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
	Left hand																
LT11NL	**E06LSEL2**	.375	.500	-	.280	6,00	-	.125	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT11NL	**E08LSEL2**	.500	.650	-	.340	8,00	-	.187	-15.0	-1.5	-	-	-	-	-	**SSN2T**	T8
LT16NL	**E10LSEL3**	.625	.800	-	.460	10,00	-	.218	-15.0	-1.5	-	-	-	-	-	**SSA3T**	T10
LT16NL	**E12LSEL3**	.750	.900	-	.510	10,00	-	.281	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NL	**E16LSEL3**	1.000	1.200	-	.650	12,00	-	.312	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NL	**E16LSEL4**	1.000	1.250	-	.710	12,00	-	.312	-15.0	-1.5	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

Order example:
Right hand: **S0612LSER2**

Note: Items listed without a shim are designed for a 1.5° inclination angle.

H-LSE





Gage Insert	Catalog number	D	Dmin	L1	F	γF°	γP°	Shim	Shim Screw	Torx	Clamp Assembly	Torx	Insert Screw	Torx
	Right hand													
LT16NR	**H20LSER3**	1.250	1.450	1.625	.765	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NR	**H24LSER3**	1.500	1.760	1.625	.890	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NR	**H32LSER3**	2.000	2.400	1.625	1.281	-15.0	-1.5	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NR	**H24LSER4**	1.500	1.782	1.625	.978	-15.0	-1.5	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LT22NR	**H32LSER4**	2.000	2.400	1.625	1.281	-15.0	-1.5	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
	Left hand													
LT16NL	**H16LSEL3**	1.000	1.200	1.625	.650	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NL	**H20LSEL3**	1.250	1.450	1.625	.765	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NL	**H24LSEL3**	1.500	1.760	1.625	.890	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT16NL	**H32LSEL3**	2.000	2.400	1.625	1.281	-15.0	-1.5	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LT22NL	**H24LSEL4**	1.500	1.782	1.625	.978	-15.0	-1.5	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LT22NL	**H32LSEL4**	2.000	2.400	1.625	1.281	-15.0	-1.5	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

NOTE: For boring adapters, see pages A236-A238.

Order example:
H20LSER3

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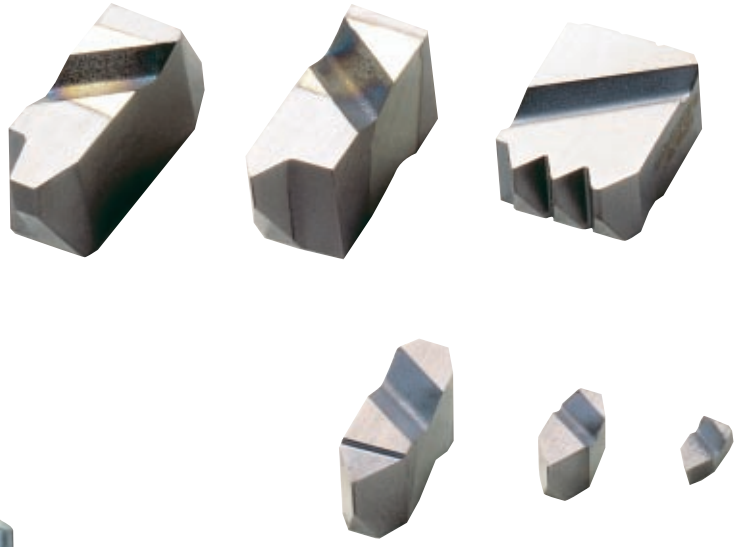
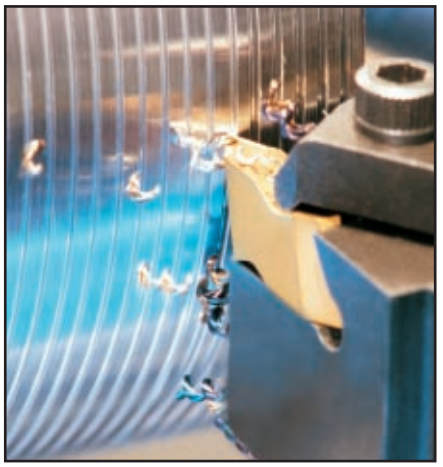
TOP NOTCH Threading ...



... the proven high-productivity threading solution!



Choosing the TOP NOTCH Threading System

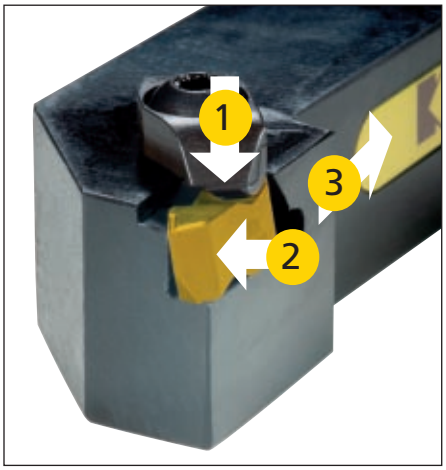
- A superior choice for heavy-duty applications like machining of Acme, Buttress, and API threads. Top Notch is also the best system for coarse pitch and multi-tooth threading applications.
- Largest selection of insert geometries and grades in the industry.
- A very rigid insert clamping design assures best tool life, surface finish, and workpiece quality.
- Simplicity of the Top Notch design does not require shim selection for thread helix angles. This helps to avoid mistakes on the shop floor.
- Reduces inventory by using the same Top Notch toolholders and boring bars with either threading or grooving inserts.
- Top Notch chipbreaker inserts eliminate long troublesome coils.
- An excellent choice for special thread forms and toolholder designs.

Precision-Ground Thread Form

- minimizes built-up edge
- precisely cuts most common materials
- reduces cutting forces
- ensures accurate high-quality threads

Superior Chip Control

- eliminates long, troublesome coils
- excellent for internal threading operations
- available in partial profile inserts for 60° thread forms



Premium KENNA PERFECT Grades

- KC5010 and KC5025 PVD TiAlN-coated, KC5410 TiB_2 coated, and KT315-coated cermet
- increase speed and reduce passes for optimum threading productivity
- produce high-quality threads longer and faster than with any other tools

New KENNA UNIVERSAL Inserts

- PVD-coated grade KU25T provides outstanding utility and value
- available in partial profile 60° thread forms both with and without chip control

Our rigid clamping design prevents insert movement during high infeed threading applications.

KENNA PERFECT – TOP NOTCH Threading

4 Easy Steps to Improve Productivity

What you need to know:

- external/internal operation
- spindle rotation/hand of thread
- feed direction

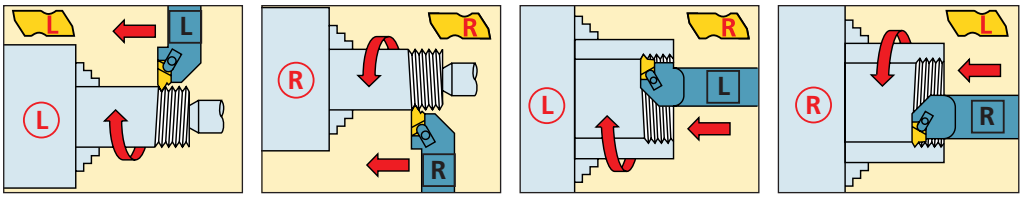
1st Step – Select Threading Method and Hand of Tooling

(L) or (R) – hand of thread

[L] or [R] – hand of toolholder

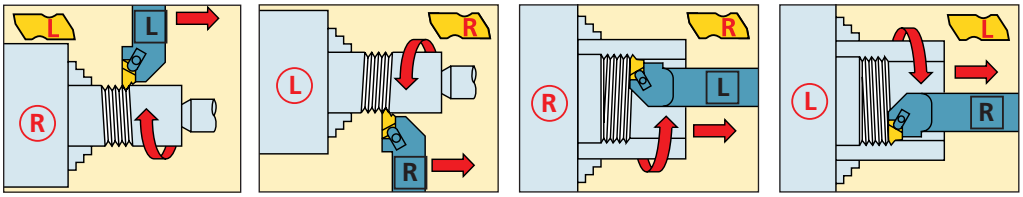
L or R – hand of insert

• Feed direction toward the chuck – standard helix



external left-hand thread | external right-hand thread | internal left-hand thread | internal right-hand thread

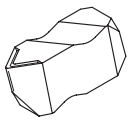
• Feed direction away from the chuck – reverse helix



external right-hand thread | external left-hand thread | internal right-hand thread | internal left-hand thread

2nd Step – Choose Insert for Application

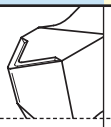
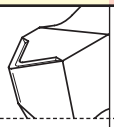
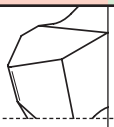
- See threading insert overview on page C35.
- Select cresting inserts for fully controlled thread form including diameter control. Cresting inserts eliminate the need for deburring.
- Non-cresting partial profile inserts can cut a variety of thread pitches. Chip control is only available with partial profile inserts.
- Note insert size for toolholder selection.



Insert Size	catalog number	KC5025	KC5010
2	NT-2RK	●	●
3	NT-3RK	●	●
4	NT-4RK	●	●

3rd Step – Select Grade and Speed

Recommendations for Grade and Speed Selection – sfm (m/min)

	Workpiece Material	Steel	Stainless Steel	Cast Iron	Non-Ferrous Metals	High-Temp Alloys
KENNA PERFECT	Insert Style	chip control or neutral 	chip control or positive 	neutral 	positive	positive
	Optimum Cutting Conditions	KC5010* 160 - 750 (50 - 230)	KC5010* 160 - 600 (50 - 185)	KC5010 230 - 700 (70 - 210)	KC5410 230 - 1300 (70 - 390)	KC5010 65 - 400 (20 - 120)
	First Choice	KC5025 130 - 650 (40 - 200)	KC5025 130 - 450 (40 - 135)	KC5025 200 - 475 (60 - 145)	KC5025 160 - 1150 (50 - 360)	KC5025 35 - 330 (10 - 100)
KENNA UNIVERSAL	Insert Style	chip control or neutral				
	Selection	KU25T 80 - 450 (25 - 140)	KU25T 80 - 350 (25 - 100)	KU25T 100 - 360 (30 - 110)	KU25T 100 - 1000 (30 - 300)	KU25T 35 - 280 (10 - 85)

* Note: KT315 is also available as an optimum cutting tool for steel and stainless steel for partial profile threading. Increase speed by 15% over the recommendations above.

Examples: Chip Control: NT-K or NT-CK (partial profile only)
Neutral: NT, NT-C, NTF, NTC, NJ, NJF, NDC-V, NA, NDC, NTB-A/B
Positive: NTP, NTK, NJP, NJK

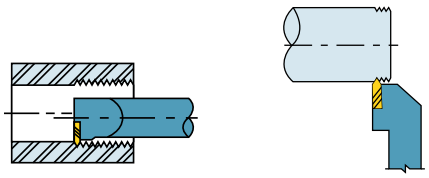
4th Step – Select Holder from Catalog Page

Note: The insert size must match the gage insert size of your toolholder selection:

Required information:

- external/internal operation
- minimum bore diameter (for internal operations)
- hand of tool
- insert size (gage insert)

Select the appropriate holder for the insert size and hand



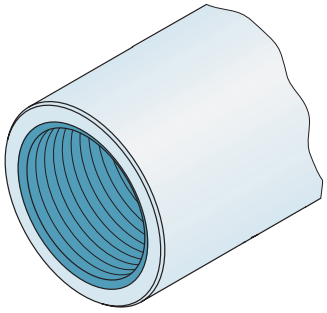
catalog number	gage insert
NSR-163D	N.3R
NSR-164D	N.4R

NOTE: TOP NOTCH toolholders and boring bars are listed with a gage insert to indicate the size and hand required. They are compatible with both grooving and threading inserts of the same size.

NOTE: Optimize your threading operation by using the proper infeed angle and the recommended infeed values.
See the Technical section on pages C58-C60 of this catalog.
For internal threading, min. bore varies depending on thread type – see C64 for details.

TOP NOTCH Threading Example:

application: 8 TPI Acme internal right-hand thread
material: alloy steel
workpiece dia.: 4.5 inch (114,3 mm)
good cutting conditions
feed toward the chuck



Recommendation:

insert: NA3L8
grade: KC5010
insert size:: 3

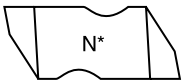
boring bar: A40NER3 (metric: A50UNNTOR4)
gage insert: N.3L

speed: 500 sfm (150 m/min)
infeed passes*: 12 passes

* Infeed recommendations given in Technical data section on pages C58 - C60.

TOP NOTCH Threading – Insert Identification System

*TOP NOTCH

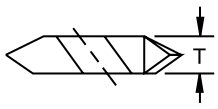


1. Type of Insert

N

2. Insert Style

A – Acme
D – API or NPT
J – UNJ thread
T – 60° V thread
W – 55° V Whitworth



insert size	T (inch)	T (mm)
1	.100	2,54
2	.150	3,81
3	.195	4,95
4	.255	6,48
5	.380	9,65
6	.383	9,73
8	.438	11,13

See full dimension chart below

4. Insert Size

F 3

3. Additional Information

B – Buttress
F – fine pitch
S – Stub Acme
C – cresting
P – positive rake
K – fine pitch, positive
U – utility**

Position indicates API or drilling industry form designation (e.g.—10RD, 8RD, .038)
or
controlled root radius threading inserts indicate the root radius in .001 inch increments (NJ, NJF, NJP, NJK)
or
M indicates metric ISO thread

5. Industry Thread Identification

R

6. Hand of Insert

R – right
L – left

- threads per inch or pitch (for metric)
- "A" or "B" type Buttress insert
- taper per foot – API threads

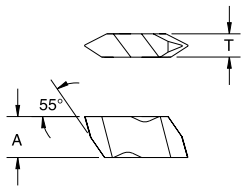
7. Definition of Insert

12

8. Additional Information

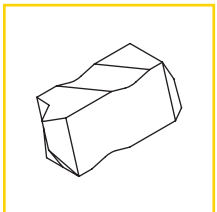
I – internal thread
E – external thread (used only if internal and external thread forms are different)
M – multiple tooth
K – standard chip control
C – coarse pitch
D – dryseal

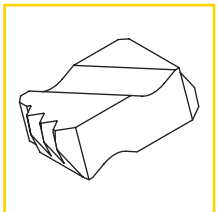
*Kennametal proprietary standard only.
**Utility threading insert can only be used in NSUR/L utility holders.

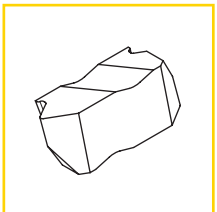


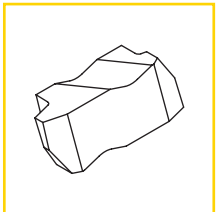
Top Notch Threading and Grooving Insert Dimensions

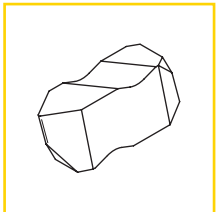
insert size	A		T	
	inch	mm	inch	mm
1	.100	2,54	.100	2,54
2	.219	5,56	.150	3,81
3	.344	8,74	.195	4,95
4	.453	11,51	.255	6,48
5	.688	17,48	.380	9,65
6	.453	11,51	.383	9,73
8	.312	7,93	.438	11,13

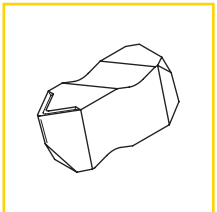

NJF


NDC-V-M


NTC


NA


NT


NT-K

Style								
Chip Control - K	Neutral	Positive	Thread Profile	Standard	Tolerance Class	Crest-ing	Application	Page
NT-K	NT	NTP	Partial Profile 60°	-	-	N	general use for 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	C36
NT-CK			Partial Profile 60° -coarse pitch	-	-	N	coarse pitch 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	C37
	NTF	NTK	Partial Profile 60° -fine pitch	-	-	N	fine pitch 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches – able to thread close to shoulders	C37 C38
	NTU		Partial Profile 60° -four-edged insert	-	-	N	four-edged insert for 60° partial profile threading – requires NSU-style toolholder for size 4U insert	C38
	NTC-M		Metric ISO	ISO R262, DIN 13	6g / 6H	Y	widely used metric 60° V-form for all industries	C38
	NTC		American UN	ANSI B1.1:74	2A / 2B	Y	widely used inch-based 60° V-form for all industries	C39
	NJ	NJP	UNJ	MIL-S-8879C	3A / 3B	N	controlled root radius on external threads for military and aerospace industries	C40
	NJF	NJK	UNJ -fine pitch	MIL-S-8879C	3A / 3B	N	controlled root radius on external threads for military and aerospace industries – able to thread close to shoulders	C40 C41
	NDC-V		NPT	USAS B2.1:1968	Standard NPT	Y	National Pipe Thread standard forms for pipe fittings	C42
	NDC-V-M		NPT - multitooth	USAS B2.1:1968	Standard NPT	Y	high productivity multitooth threading inserts for NPT threads	C42
	NWC		Whitworth, BSW, BSP	BS 84:1956, ISO 228/1:1982, DIN 259	Medium Class A	Y	widely used 55° form for gas and water connections	C42
	ND		API Rotary Shoulder Connections - partial profile	API SPEC. 7:1990	Standard API	N	60° V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms	C43
	NDC		API Rotary Shoulder Connections - cresting	API SPEC. 7:1990	Standard API	Y	60° V-form used for rotary shoulder pipe connections in the oil and gas industry including V-.038R, V-.040, and V-.050 forms – complete cresting form including taper	C43
	NDC-RD		API Round	API STD. 5B:1979	Standard API RD	Y	60° V-form with large radius for casing, tubing and line pipe in the oil and gas industry including 8 and 10 round forms	C44
	NDC-RD-M		API Round - multitooth	API STD. 5B:1979	Standard API RD	Y	high productivity multitooth threading inserts for API round threads	C44
	NA		Acme	ANSI B1.5:1988	3G	N	29° truncated thread form for motion applications in a wide variety of industries	C45
	NAS		Stub Acme	ANSI B1.8:1988	2G	N	shallow depth 29° truncated thread form for motion applications in a wide variety of industries	C46
	NTB-A		American Buttress · 7° pressure flank leading (Push)	ANSI B1.9:1973	Class 2	N	sawtooth form for axial load bearing applications in a variety of industries – use the "A" style when the 7° pressure flank is the leading edge	C46
	NTB-B		American Buttress · 45° clearance flank leading (Pull)	ANSI B1.9:1973	Class 2	N	sawtooth form for axial load bearing applications in a variety of industries – use the "B" style when the 45° clearance flank is the leading edge	C46

TOP NOTCH Threading Inserts

		Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NT-K	**Partial Profile 60°**	2	**NT2RK**		0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●		●		●
		2		**NT2LK**	0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●		●		●
		3	**NT3RK**		1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●		●		●
		3		**NT3LK**	1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●		●		●
		4	**NT4RK**		1,25-6,25	2,00-6,25	4-20	4-12	.0065	0,17	.128	3,25	●	●		●		●
		4		**NT4LK**	1,25-6,25	2,00-6,25	4-20	4-12	.0065	0,17	.128	3,25	●	●		●		●
NT-1L	**Partial Profile 60° Internal**	1	**NT1L**		-	1,00-2,00	-	12-24	.003	0,08	.043	1,09	●	●			●	
NT	**Partial Profile 60°**	2	**NT2R**		0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●			●	●
		2		**NT2L**	0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●			●	●
		3	**NT3R**		1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●			●	●
		3		**NT3L**	1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●			●	●
		4	**NT4R**		1,25-6,25	2,00-6,25	4-20	4-20	.0065	0,17	.128	3,25	●	●			●	●
		4		**NT4L**	1,25-6,25	2,00-6,25	4-20	4-20	.0065	0,17	.128	3,25	●	●			●	●

Order example:
Catalog number: NT2RK
Insert grade: KC5010

		Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NTP	**Partial Profile 60°**	2	**NTP2R**		0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●	●		●	
		2		**NTP2L**	0,70-3,00	1,25-3,50	8-36	7-20	.004	0,10	.075	1,91	●	●			●	
		3	**NTP3R**		1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●	●		●	
		3		**NTP3L**	1,25-4,00	2,00-5,00	6-20	5-12	.0065	0,17	.098	2,49	●	●	●		●	
		4	**NTP4R**		1,25-6,25	2,00-6,25	4-20	4-12	.0065	0,17	.128	3,25	●	●	●		●	
		4		**NTP4L**	1,25-6,25	2,00-6,25	4-20	4-12	.0065	0,17	.128	3,25	●	●	●			
NT-CK	**Partial Profile 60°**	3	**NT3RCK**		2,50-4,00	4,00	6-11	6	.0135	0,34	.097	2,46	●	●				
		3		**NT3LCK**	2,50-4,00	4,00	6-11	6	.0135	0,34	.097	2,46	●	●				
		4	**NT4RCK**		2,50-5,50	4,00-5,50	4.5-11	4.5-6	.0135	0,34	.127	3,23	●	●				
		4		**NT4LCK**	2,50-5,50	4,00-5,50	4.5-11	4.5-6	.0135	0,34	.127	3,23	●	●				
NTF	**Partial Profile 60°**	2	**NTF2R**		0,60-1,75	1,00-2,00	14-44	12-24	.003	0,08	.110	2,79	●	●			●	
		2		**NTF2L**	0,60-1,75	1,00-2,00	14-44	12-24	.003	0,08	.110	2,79	●	●			●	
		3	**NTF3R**		0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.141	3,58	●	●			●	
		3		**NTF3L**	0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.141	3,58	●	●			●	
		4	**NTF4R**		0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.201	5,11	●	●			●	
		4		**NTF4L**	0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.201	5,11	●	●				

Order example:
Catalog number: NTF2R
Insert grade: KC5010

TOP NOTCH Threading Inserts

		Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NTK	**Partial Profile 60°**	2	**NTK2R**		0,60-1,75	1,00-2,00	14-44	12-24	.003	0,08	.110	2,79	●	●			●	
		2		**NTK2L**	0,60-1,75	1,00-2,00	14-44	12-24	.003	0,08	.110	2,79	●	●			●	
		3	**NTK3R**		0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.141	3,58	●	●			●	
		3		**NTK3L**	0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.141	3,58	●	●			●	
		4	**NTK4R**		0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.201	5,11	●	●				
		4		**NTK4L**	0,60-2,50	1,00-2,50	10-44	9-24	.003	0,08	.201	5,11	●	●				
NTU	**Partial Profile 60° External**	4U	**NTU4R**		1,25-6,25	-	4-20	-	.0045	0,11	.125	3,18	●	●				
		4U		**NTU4L**	1,25-6,25	-	4-20	-	.0045	0,11	.125	3,18	●	●				
NTC-M-E	**ISO Metric-External**	3	**NTC3MR150E**		1,50	-	-	-	.0080	0,20	.145	3,68	●	●				
		3		**NTC3ML150E**	1,50	-	-	-	.0080	0,20	.145	3,68	●	●				
		3	**NTC3MR200E**		2,00	-	-	-	.0106	0,27	.145	3,68	●	●				
		3		**NTC3ML200E**	2,00	-	-	-	.0106	0,27	.145	3,68	●	●				
		3	**NTC3MR300E**		3,00	-	-	-	.0159	0,40	.114	2,90	●	●				
		3		**NTC3ML300E**	3,00	-	-	-	.0159	0,40	.114	2,90	●	●				

Order example:
Catalog number: NTK2R
Insert grade: KC5010

		Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NTC-M-I	**ISO Metric-Internal**	3	**NTC3MR150I**		-	1,50	-	-	.0031	0,08	.145	3,68		●				
		3		**NTC3ML150I**	-	1,50	-	-	.0031	0,08	.145	3,68		●				
		3	**NTC3MR200I**		-	2,00	-	-	.0038	0,10	.145	3,68		●				
		3		**NTC3ML200I**	-	2,00	-	-	.0038	0,10	.145	3,68		●				
		3	**NTC3MR300I**		-	3,00	-	-	.0053	0,14	.106	2,69		●				
		3		**NTC3ML300I**	-	3,00	-	-	.0053	0,14	.106	2,69		●				
NTC-E	**American UN-External**	3	**NTC3R32E**		-	-	32	-	.0040	0,10	.148	3,76	●	●				
		3	**NTC3R28E**		-	-	28	-	.0045	0,12	.148	3,76	●	●				
		3	**NTC3R24E**		-	-	24	-	.0052	0,13	.148	3,76	●	●				
		3	**NTC3R20E**		-	-	20	-	.0062	0,16	.148	3,76	●	●				
		3		**NTC3L20E**	-	-	20	-	.0062	0,16	.148	3,76	●	●				
		3	**NTC3R18E**		-	-	18	-	.0070	0,18	.148	3,76	●	●				
		3		**NTC3L18E**	-	-	18	-	.0070	0,18	.148	3,76	●	●				
		3	**NTC3R16E**		-	-	16	-	.0075	0,19	.148	3,76	●	●				
		3		**NTC3L16E**	-	-	16	-	.0075	0,19	.148	3,76	●	●				
		3	**NTC3R14E**		-	-	14	-	.0088	0,22	.148	3,76	●	●				
		3		**NTC3L14E**	-	-	14	-	.0088	0,22	.148	3,76	●	●				
		3	**NTC3R13E**		-	-	13	-	.0096	0,24	.148	3,76	●	●				
		3	**NTC3R12E**		-	-	12	-	.0100	0,25	.148	3,76	●	●				
		3		**NTC3L12E**	-	-	12	-	.0100	0,25	.148	3,76	●	●				
		3	**NTC3R11E**		-	-	11	-	.0110	0,28	.107	2,72	●	●				
		3	**NTC3R10E**		-	-	10	-	.0124	0,32	.107	2,72	●	●				
		3		**NTC3L10E**	-	-	10	-	.0124	0,32	.107	2,72	●	●				
		3	**NTC3R9E**		-	-	9	-	.0140	0,36	.107	2,72	●	●				
		3	**NTC3R8E**		-	-	8	-	.0160	0,41	.107	2,72	●	●				
		3		**NTC3L8E**	-	-	8	-	.0160	0,41	.107	2,72	●	●				
		3	**NTC3R7E**		-	-	7	-	.0186	0,47	.107	2,72	●	●				
NTC-I	**American UN-Internal**	3	**NTC3R16I**		-	-	-	16	.0030	0,08	.148	3,76		●				
		3		**NTC3L16I**	-	-	-	16	.0030	0,08	.148	3,76		●				
		3	**NTC3R14I**		-	-	-	14	.0037	0,09	.148	3,76		●				
		3		**NTC3L14I**	-	-	-	14	.0037	0,09	.148	3,76		●				
		3	**NTC3R12I**		-	-	-	12	.0040	0,10	.148	3,76		●				
		3		**NTC3L12I**	-	-	-	12	.0040	0,10	.148	3,76		●				
		3	**NTC3R10I**		-	-	-	10	.0052	0,13	.107	2,72		●				
		3		**NTC3L10I**	-	-	-	10	.0052	0,13	.107	2,72		●				
		3	**NTC3R8I**		-	-	-	8	.0070	0,18	.107	2,72		●				
		3		**NTC3L8I**	-	-	-	8	.0070	0,18	.107	2,72		●				

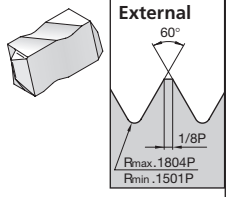
Order example:
Catalog number: NTC3MR150I
Insert grade: KC5025

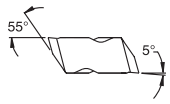
TOP NOTCH Threading Inserts

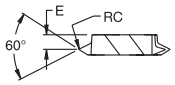
		Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NJ	**UNJ External**	3	**NJ3010R16**		-	-	16	-	.0099	0,25	.098	2,49	●	●			●	
		3		**NJ3010L16**	-	-	16	-	.0099	0,25	.098	2,49	●	●				
		3	**NJ3014R12**		-	-	12	-	.0130	0,33	.098	2,49	●	●			●	
		3		**NJ3014L12**	-	-	12	-	.0130	0,33	.098	2,49	●	●			●	
		3	**NJ3020R8**		-	-	8	-	.0193	0,49	.098	2,49	●	●				
		3		**NJ3020L8**	-	-	8	-	.0193	0,49	.098	2,49	●	●				
NJP	**UNJ External**	3	**NJP3010R16**		-	-	16	-	.0099	0,25	.098	2,49	●	●				
		3		**NJP3010L16**	-	-	16	-	.0099	0,25	.098	2,49	●	●				
		3	**NJP3014R12**		-	-	12	-	.0130	0,33	.098	2,49	●	●			●	
		3		**NJP3014L12**	-	-	12	-	.0130	0,33	.098	2,49	●	●				
		3	**NJP3020R8**		-	-	8	-	.0193	0,49	.098	2,49	●	●				
		3		**NJP3020L8**	-	-	8	-	.0193	0,49	.098	2,49	●	●				
NJF	**UNJ External**	3	**NJF3005R32**		-	-	32	-	.0052	0,13	.141	3,58	●	●				
		3		**NJF3005L32**	-	-	32	-	.0052	0,13	.141	3,58	●	●				
		3	**NJF3006R28**		-	-	28	-	.0059	0,15	.141	3,58	●	●			●	
		3		**NJF3006L28**	-	-	28	-	.0059	0,15	.141	3,58	●	●				
		3	**NJF3007R24**		-	-	24	-	.0068	0,17	.141	3,58	●	●				
		3		**NJF3007L24**	-	-	24	-	.0068	0,17	.141	3,58	●	●				
		3	**NJF3008R20**		-	-	20	-	.0078	0,20	.141	3,58	●	●			●	
		3		**NJF3008L20**	-	-	20	-	.0078	0,20	.141	3,58	●	●				
		3	**NJF3009R18**		-	-	18	-	.0088	0,22	.141	3,58	●	●			●	
		3		**NJF3009L18**	-	-	18	-	.0088	0,22	.141	3,58	●	●				
		3	**NJF3010R16**		-	-	16	-	.0099	0,25	.141	3,58	●	●			●	
		3		**NJF3010L16**	-	-	16	-	.0099	0,25	.141	3,58	●	●				
		3	**NJF3012R14**		-	-	14	-	.0112	0,28	.141	3,58	●	●				
		3		**NJF3012L14**	-	-	14	-	.0112	0,28	.141	3,58	●	●				

Order example:
Catalog number: NJ3010R16
Insert grade: KC5010

NJK **UNJ External**







Insert size	Catalog number Right hand	Catalog number Left hand	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	RC inch	RC mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
3	NJK3005R32		-	-	32	-	.0052	0,13	.141	3,58	●	●				
3		NJK3005L32	-	-	32	-	.0052	0,13	.141	3,58	●	●				
3	NJK3006R28		-	-	28	-	.0059	0,15	.141	3,58	●	●				
3		NJK3006L28	-	-	28	-	.0059	0,15	.141	3,58	●	●				
3	NJK3007R24		-	-	24	-	.0068	0,17	.141	3,58	●	●				
3		NJK3007L24	-	-	24	-	.0068	0,17	.141	3,58	●	●				
3	NJK3008R20		-	-	20	-	.0078	0,20	.141	3,58	●	●			●	
3		NJK3008L20	-	-	20	-	.0078	0,20	.141	3,58	●	●				
3	NJK3009R18		-	-	18	-	.0088	0,22	.141	3,58	●	●				
3		NJK3009L18	-	-	18	-	.0088	0,22	.141	3,58	●	●				
3	NJK3010R16		-	-	16	-	.0099	0,25	.141	3,58	●	●			●	
3		NJK3010L16	-	-	16	-	.0099	0,25	.141	3,58	●	●				
3	NJK3012R14		-	-	14	-	.0112	0,28	.141	3,58	●	●				
3		NJK3012L14	-	-	14	-	.0112	0,28	.141	3,58	●	●				

Order example:
Catalog number: NJF3005R32
Insert grade: KC5010

		Insert size	Catalog number Right hand	Catalog number Left hand	TPI	TPF	RC inch	RC mm	CF inch	CF mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NDC-V	**NPT**	3	**NDC327VR75**		27	.750	.002	0,05	-	-	.144	3,66	●					
		3	**NDC318VR75**		18	.750	.003	0,08	-	-	.144	3,66	●					
		3	**NDC314VR75**		14	.750	.003	0,08	-	-	.144	3,66	●					
		3	**NDC3115VR75**		11.5	.750	.004	0,10	-	-	.144	3,66	●					
		3		**NDC3115VL75**	11.5	.750	.004	0,10	-	-	.144	3,66	●					
		3	**NDC38VR75**		8	.750	.005	0,13	-	-	.100	2,54	●					
		3		**NDC38VL75**	8	.750	.005	0,13	-	-	.100	2,54	●					
NDC-V-M (MULTI-TOOTH)	**NPT**	8	**NDC8115VR75M**		11.5	.750	.004	0,10	-	-	.102	2,59	●					
		8		**NDC8115VL75M**	11.5	.750	.004	0,10	-	-	.102	2,59	●					
		8	**NDC88VR75M**		8	.750	.005	0,13	-	-	.095	2,41	●					
		8		**NDC88VL75M**	8	.750	.005	0,13	-	-	.095	2,41	●					
NWC-E	**Whitworth BSW, BSP-External**	3	**NWC3R14E**		14	-	.0093	0,235	-	-	.135	3,43	●	●			●	
		3	**NWC3R11E**		11	-	.0118	0,300	-	-	.135	3,43	●	●			●	

Order example:
Catalog number: NDC327VR75
Insert grade: KC5010

		Insert size	Catalog number Right hand	Catalog number Left hand	TPI	TPF	RC inch	RC mm	CF inch	CF mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NWC-I	**Whitworth BSW, BSP-Internal**	3		**NWC3L14I**	14	-	.0093	0,235	-	-	.135	3,43		●			●	
		3		**NWC3L11I**	11	-	.0118	0,300	-	-	.135	3,43		●				
ND (Partial Profile)	**API Rotary Shoulder Connections**	3	**ND3040R**		5	-	.0175	0,445	-	-	.082	2,08	●	●				
		3		**ND33040L**	5	-	.0175	0,445	-	-	.082	2,08	●	●				
		3	**ND3038R**		4	-	.0355	0,902	-	-	.082	2,08	●	●				
		3		**ND3038L**	4	-	.0355	0,902	-	-	.082	2,08	●	●				
		4	**ND4040R**		5	-	.0175	0,445	-	-	.128	3,25		●				
		4		**ND4040L**	5	-	.0175	0,445	-	-	.128	3,25		●				
		4	**ND4050R**		4	-	.0225	0,572	-	-	.128	3,25	●	●				
		4		**ND4050L**	4	-	.0225	0,572	-	-	.128	3,25	●	●				
NDC (Cresting)	**API Rotary Shoulder Connections**	3	**NDC3040R3**		5	3.000	.0175	0,445	-	-	.147	3,73	●	●				
		3		**NDC3040L3**	5	3.000	.0175	0,445	-	-	.147	3,73	●	●				
		4	**NDC4040R3**		5	3.000	.0175	0,445	-	-	.147	3,73	●	●				
		4		**NDC4040L3**	5	3.000	.0175	0,445	-	-	.147	3,73	●	●				
		4	**NDC4050R2**		4	2.000	.0225	0,572	-	-	.183	4,65	●	●				
		4		**NDC4050L2**	4	2.000	.0225	0,572	-	-	.183	4,65	●	●				
		4	**NDC4050R3**		4	3.000	.0225	0,572	-	-	.183	4,65	●	●				
		4		**NDC4050L3**	4	3.000	.0225	0,572	-	-	.183	4,65	●	●				
		4	**NDC4038R2**		4	2.000	.0355	0,902	-	-	.183	4,65	●	●				
		4		**NDC4038L2**	4	2.000	.0355	0,902	-	-	.183	4,65	●	●				

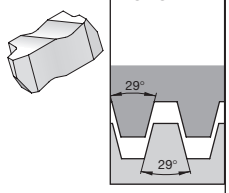
Order example:
Catalog number: NWC3L14I
Insert grade: KC5025

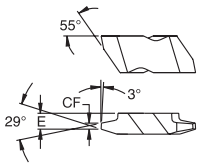
TOP NOTCH Threading Inserts

		Insert size	Catalog number Right hand	Catalog number Left hand	TPI	TPF	RC inch	RC mm	CF inch	CF mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NDC-RD	**API Round**	3	**NDC310RDR75**		10	.750	.014	0,36	-	-	.125	3,18	●	●				
		3		**NDC310RDL75**	10	.750	.014	0,36	-	-	.125	3,18	●	●				
		3	**NDC38RDR75**		8	.750	.017	0,43	-	-	.125	3,18	●	●				
		3		**NDC38RDL75**	8	.750	.017	0,43	-	-	.125	3,18	●	●				
NDC-RD-M (MULTI-TOOTH)	**API Round**	6	**NDC68RDR75M**		8	.750	.016	0,41	-	-	.103	2,62	●					
		6		**NDC68RDL75M**	8	.750	.016	0,41	-	-	.103	2,62	●					

Order example:
Catalog number: NDC310RDR75
Insert grade: KC5010

NA **Acme**





Insert size	Catalog number Right hand	Catalog number Left hand	TPI	TPF	RC inch	RC mm	CF inch	CF mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
3	**NA3R16**		16	-	-	-	.0206	0,523	.149	3,79	●	●				
3		**NA3L16**	16	-	-	-	.0206	0,523	.149	3,79	●	●				
3	**NA3R14**		14	-	-	-	.0239	0,607	.149	3,79	●	●				
3		**NA3L14**	14	-	-	-	.0239	0,607	.149	3,79	●	●				
3	**NA3R12**		12	-	-	-	.0283	0,719	.149	3,79	●	●				
3		**NA3L12**	12	-	-	-	.0283	0,719	.149	3,79	●	●				
3	**NA3R10**		10	-	-	-	.0319	0,810	.149	3,79	●	●			●	
3		**NA3L10**	10	-	-	-	.0319	0,810	.149	3,79	●	●				
4	**NA4R10**		10	-	-	-	.0319	0,810	.202	5,13	●	●				
4		**NA4L10**	10	-	-	-	.0319	0,810	.202	5,13	●	●				
3	**NA3R8**		8	-	-	-	.0411	1,044	.149	3,79	●	●				
3		**NA3L8**	8	-	-	-	.0411	1,044	.149	3,79	●	●				
4	**NA4R8**		8	-	-	-	.0411	1,044	.202	5,13	●	●				
4		**NA4L8**	8	-	-	-	.0411	1,044	.202	5,13	●	●				
3	**NA3R6**		6	-	-	-	.0566	1,438	.149	3,79	●	●				
3		**NA3L6**	6	-	-	-	.0566	1,438	.149	3,79	●	●				
4	**NA4R6**		6	-	-	-	.0566	1,438	.202	5,13	●	●				
4		**NA4L6**	6	-	-	-	.0566	1,438	.202	5,13	●	●				
3	**NA3R5**		5	-	-	-	.0689	1,750	.149	3,79	●	●			●	
3		**NA3L5**	5	-	-	-	.0689	1,750	.149	3,79	●	●				
4	**NA4R5**		5	-	-	-	.0689	1,750	.202	5,13	●	●				
4		**NA4L5**	5	-	-	-	.0689	1,750	.202	5,13	●	●				
3	**NA3R4**		4	-	-	-	.0875	2,223	.133	3,38	●	●			●	
3		**NA3L4**	4	-	-	-	.0875	2,223	.133	3,38	●	●			●	
4	**NA4R4**		4	-	-	-	.0875	2,223	.202	5,13	●	●				
4		**NA4L4**	4	-	-	-	.0875	2,223	.202	5,13	●	●				
6	**NA6R3**		3	-	-	-	.1184	3,007	.283	7,19	●	●				
6		**NA6L3**	3	-	-	-	.1184	3,007	.283	7,19	●	●				
6	**NA6R25**		2.5	-	-	-	.1431	3,635	.283	7,19	●	●				
6		**NA6L25**	2.5	-	-	-	.1431	3,635	.283	7,19	●	●				
6	**NA6R2**		2	-	-	-	.1802	4,577	.283	7,19	●	●				
6		**NA6L2**	2.	-	-	-	.1802	4,577	.283	7,19	●	●				

Order example:
Catalog number: NAS3R16
Insert grade: KC5010

		Insert size	Catalog number Right hand	Catalog number Left hand	TPI	TPF	RC inch	RC mm	CF inch	CF mm	E inch	E mm	KC5010	KC5025	KC5410	KT315	K68	KENNA UNIVERSAL KU25T
NAS	**Stub Acme**	3	**NAS3R16**		16	-	-	-	.0238	0,605	.149	3,79		●				
		3		**NAS3L16**	16	-	-	-	.0238	0,605	.149	3,79		●				
		3	**NAS3R14**		14	-	-	-	.0276	0,701	.149	3,79		●				
		3		**NAS3L14**	14	-	-	-	.0276	0,701	.149	3,79		●				
		3	**NAS3R12**		12	-	-	-	.0326	0,828	.149	3,79		●				
		3		**NAS3L12**	12	-	-	-	.0326	0,828	.149	3,79		●				
		3	**NAS3R10**		10	-	-	-	.0370	0,940	.149	3,79	●	●				
		3		**NAS3L10**	10	-	-	-	.0370	0,940	.149	3,79	●	●				
		3	**NAS3R8**		8	-	-	-	.0476	1,209	.149	3,79	●	●				
		3		**NAS3L8**	8	-	-	-	.0476	1,209	.149	3,79	●	●				
		3	**NAS3R6**		6	-	-	-	.0652	1,656	.149	3,79	●	●				
		3		**NAS3L6**	6	-	-	-	.0652	1,656	.149	3,79	●	●				
		3	**NAS3R5**		5	-	-	-	.0793	2,014	.149	3,79	●	●				
		3		**NAS3L5**	5	-	-	-	.0793	2,014	.149	3,79	●	●				
NTB-A	**American Buttress – Push**	2	**NTB2RA**		16-20	-	.003	0,076	-	-	.126	3,20	●	●			●	
		2		**NTB2LA**	16-20	-	.003	0,076	-	-	.126	3,20	●	●				
		3	**NTB3RA**		8-16	-	.0065	0,165	-	-	.164	4,17	●	●				
		3		**NTB3LA**	8-16	-	.0065	0,165	-	-	.164	4,17	●	●			●	
		4	**NTB4RA**		4-6	-	.010	0,254	-	-	.206	5,23	●	●				
		4		**NTB4LA**	4-6	-	.010	0,254	-	-	.206	5,23	●	●				
NTB-B	**American Buttress – Pull**	2	**NTB2RB**		16-20	-	.003	0,076	-	-	.010	0,25	●	●				
		2		**NTB2LB**	16-20	-	.003	0,076	-	-	.010	0,25	●	●				
		3	**NTB3RB**		8-16	-	.0065	0,165	-	-	.012	0,31	●	●			●	
		3		**NTB3LB**	8-16	-	.0065	0,165	-	-	.012	0,31	●	●			●	
		4	**NTB4RB**		4-6	-	.010	0,254	-	-	.016	0,41	●	●				
		4		**NTB4LB**	4-6	-	.010	0,254	-	-	.016	0,41	●	●				

Order example:
Catalog number: NAS3R16
Insert grade: KC5025

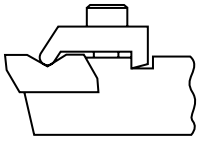
NOTE: For details on American Buttress insert selection, see pages C67-C68.

METRIC

INCH

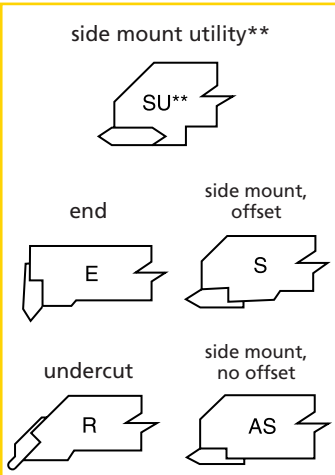
1. Insert Holding Method	2. Insert Mounting Location	3. Hand of Tool	4. Drop Head	5. Shank Size	6. Insert Size	7. Qualified Surface and Length
N	S	R		2525M 16	4	D

1. Insert Holding Method

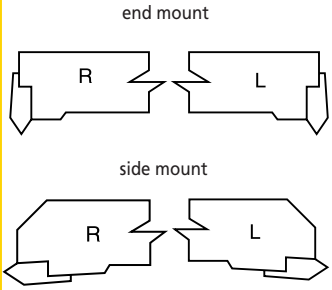


N – TOP NOTCH*

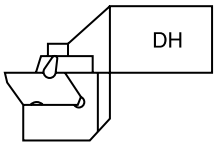
2. Insert Mounting Location



3. Hand of Tool



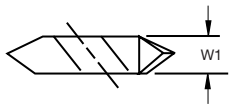
4. Drop Head



5. Shank Size

metric:
Shank height and width in mm and holder length according to ISO standard.
inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and larger, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width, and the second digit the number of quarters of height, except for a toolholder 1 1/4" x 1 1/2", which is given the number 91.

6. Insert Size



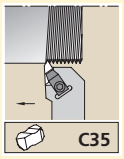
inch insert size	W1 inch	W1 mm
2	.150	3,81
3	.195	4,95
4	.255	6,98
5	.380	9,65
6	.383	9,73
8	.438	11,13

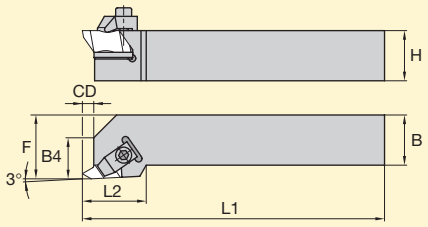
7. Qualified Surface and Length

A – qualified back and end, 4" long
B – qualified back and end, 4.5" long
C – qualified back and end, 5" long
D – qualified back and end, 6" long
E – qualified back and end, 7" long
V – qualified back and end, 3.5" long*
Q – qualified metric holder

* Kennametal proprietary standard only.
**Side mount utility holder can only use NTU inserts.

NS



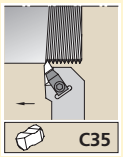


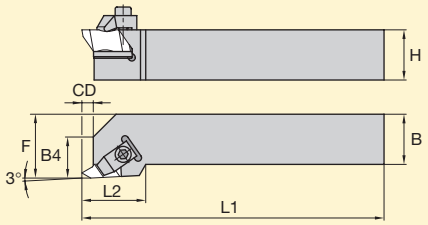
Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2R	**NSR062**	.375	.375	.562	2.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR082V**	.500	.500	.750	3.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR102B**	.625	.625	.875	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NSR122B**	.750	.750	1.000	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	
N.2R	**NSR162C**	1.000	1.000	1.250	5.00	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NSR123A**	.750	.750	1.000	4.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR123B**	.750	.750	1.000	4.50	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR163C**	1.000	1.000	1.250	5.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR163D**	1.000	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR853D**	1.250	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR203D**	1.250	1.250	1.500	6.00	1.25	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR243D**	1.500	1.500	2.000	6.00	1.38	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.3R	**NSR243E**	1.500	1.500	2.000	7.00	1.38	.50	.210	-	-	-	-	-	**CM72LP**	**S2112**	25IP	-	-
N.5R	**NSR205D**	1.250	1.250	1.500	6.00	2.00	.61	.415	-	-	-	-	-	**CM80**	**S352**	1/4	-	-
N.5R	**NSR245D**	1.500	1.500	2.000	6.00	2.00	.61	.415	-	-	-	-	-	**CM80**	**S352**	1/4	-	-
	Left hand																	
N.2L	**NSL062**	.375	.375	.562	2.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL082V**	.500	.500	.750	3.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL102B**	.625	.625	.875	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL122B**	.750	.750	1.000	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NSL162C**	1.000	1.000	1.250	5.00	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NSL123A**	.750	.750	1.000	4.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL123B**	.750	.750	1.000	4.50	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL163C**	1.000	1.000	1.250	5.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL163D**	1.000	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL853D**	1.250	1.000	1.250	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL203D**	1.250	1.250	1.500	6.00	1.25	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL243D**	1.500	1.500	2.000	6.00	1.38	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.3L	**NSL243E**	1.500	1.500	2.000	7.00	1.38	.50	.210	-	-	-	-	-	**CM73LP**	**S2112**	25IP	-	-
N.5L	**NSL205D**	1.250	1.250	1.500	6.00	2.00	.61	.415	-	-	-	-	-	**CM81**	**S352**	1/4	-	-

Order example:
NSR062

NOTE: F dimension measured over sharp point of NG-style grooving insert.

NS (with shim)



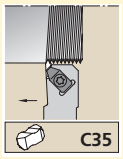


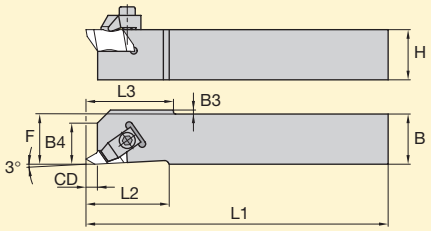
Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.4R	**NSR164C**	1.000	1.000	1.250	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR164D**	1.000	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR854D**	1.250	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR864E**	1.500	1.000	1.250	7.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR204C**	1.250	1.250	1.500	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR204D**	1.250	1.250	1.500	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR244D**	1.500	1.500	2.000	6.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NSR244E**	1.500	1.500	2.000	7.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM72LP**	**S2112**	25 IP	-	-
N.6R	**NSR166D**	1.000	1.000	1.250	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	-
N.6R	**NSR206D**	1.250	1.250	1.500	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	
N.6R	**NSR246D**	1.500	1.500	2.000	6.00	1.50	.67	.334	-	-	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32	-	-
N.8R	**NSR168D**	1.000	1.000	1.250	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
N.8R	**NSR208D**	1.250	1.250	1.500	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
N.8R	**NSR248D**	1.500	1.500	2.000	6.00	1.38	.72	.225	-	-	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16	-	-
	Left hand																	
N.4L	**NSL164C**	1.000	1.000	1.250	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL164D**	1.000	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL854D**	1.250	1.000	1.250	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL864E**	1.500	1.000	1.250	7.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL204C**	1.250	1.250	1.500	5.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL204D**	1.250	1.250	1.500	6.00	1.38	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL244D**	1.500	1.500	2.000	6.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NSL244E**	1.500	1.500	2.000	7.00	1.50	.54	.294	-	-	**SM420**	**SL344**	-	**CM73LP**	**S2112**	25 IP	-	-
N.6L	**NSL166D**	1.000	1.000	1.250	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.6L	**NSL206D**	1.250	1.250	1.500	6.00	1.38	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.6L	**NSL246D**	1.500	1.500	2.000	6.00	1.50	.67	.334	-	-	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32	-	-
N.8L	**NSL168D**	1.000	1.000	1.250	6.00	1.25	.72	.225	-	-	**SM419**	**S112**	1/16	**CM145**	**S422**	3/16	-	-

Order example:
NSR164C

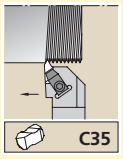
NOTE: F dimension measured over sharp point of NG-style grooving insert.

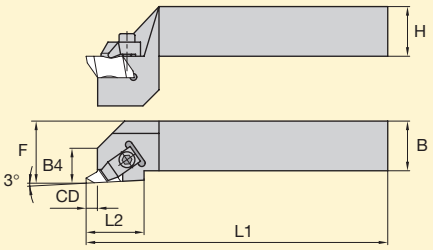
NAS





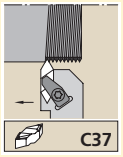
NS-DH

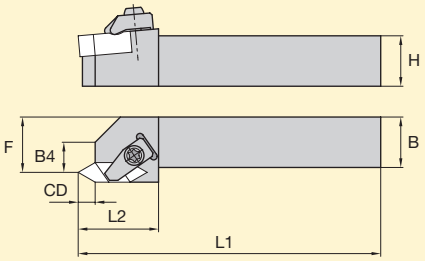




Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2R	**NASR062D**	.375	.375	.375	6.00	.75	.35	.138	.070	.88	-	-	-	**CM182**	**S310**	7/64	-	-
N.2R	**NASR082D**	.500	.500	.500	6.00	.75	.35	.138	-	-	-	-	-	**CM182**	**S310**	7/64	-	-
N.2R	**NASR102B**	.625	.625	.625	4.50	.75	.35	.138	-	-	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NASR083D**	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	-	-	-	**CM184LP**	**S2112**	25 IP	-	-
N.3R	**NASR103B**	.625	.625	.625	4.50	1.25	.50	.210	-	-	-	-	-	**CM184LP**	**S2112**	25 IP	-	-
	Left hand																	
N.2L	**NASL062D**	.375	.375	.375	6.00	.75	.35	.138	.070	.88	-	-	-	**CM183**	**S310**	7/64	-	-
N.2L	**NASL082D**	.500	.500	.500	6.00	.75	.35	.138	-	-	-	-	-	**CM183**	**S310**	7/64	-	-
N.2L	**NASL102B**	.625	.625	.625	4.50	.75	.35	.138	-	-	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NASL083D**	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	-	-	-	**CM185LP**	**S2112**	25 IP	-	-
N.3L	**NASL103B**	.625	.625	.625	4.50	1.25	.50	.210	-	-	-	-	-	**CM185LP**	**S2112**	25 IP	-	-
	Right hand																	
N.2R	**NSRDH122B**	.750	.750	1.000	4.50	.75	.40	.138	-	-	-	-	-	**CM74**	**S310**	7/64	**S1020**	1/8
N.2R	**NSRDH162C**	1.000	1.000	1.250	5.00	.75	.40	.138	-	-	-	-	-	**CM74**	**S310**	7/64	**S1020**	1/8
N.3R	**NSRDH123A**	.750	.750	1.250	4.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH163C**	1.000	1.000	1.250	5.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH163D**	1.000	1.000	1.250	6.00	1.25	.58	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NSRDH203D**	1.250	1.250	1.500	6.00	1.25	.62	.210	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	**S965**	3/16
N.4R	**NSRDH204D**	1.250	1.250	1.500	6.00	1.38	.62	.294	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	**S965**	3/16
	Left hand																	
N.3L	**NSLDH203D**	1.250	1.250	1.500	6.00	1.25	.62	.210	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	**S965**	3/16

NSU





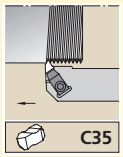
Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L3	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
NTU4R	**NSUR124C***	.750	.750	.875	5.00	1.25	.50	.240	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
NTU4R	**NSUR164D***	1.000	1.000	1.125	6.00	1.25	.50	.240	-	-	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
	Left hand																	
NTU4L	**NSUL124C***	.750	.750	.875	5.00	1.25	.50	.240	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
NTU4L	**NSUL164D***	1.000	1.000	1.125	6.00	1.25	.50	.240	-	-	-	-	-	**CM73LP**	**S2112**	25 IP	-	-

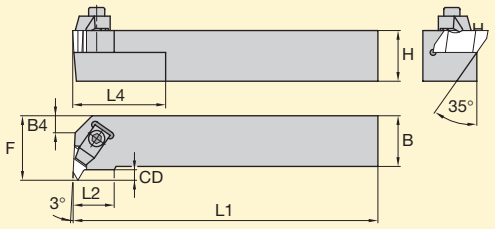
*Toolholders only for Threading Inserts NTU4...

Order example:
NASR062D

NOTE: F dimension measured over sharp point of NG-style grooving insert.

NE





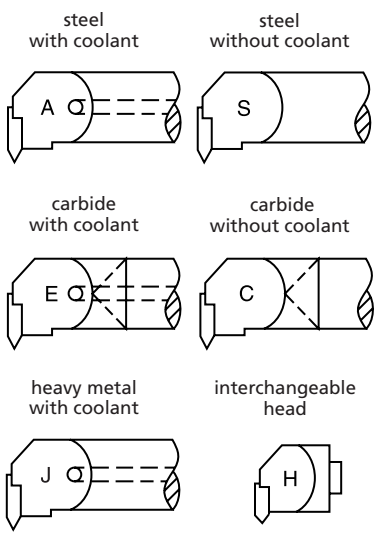
Gage Insert	Catalog number	H	B	F	L1	L2	B4	CD	B3	L4	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)/ Torx Plus	Jack Screw	Hex (inch)
	Right hand																	
N.2L	**NER062**	.375	.375	.750	2.50	.50	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER082V**	.500	.500	.750	3.50	.50	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER102B**	.625	.625	.750	4.50	-	-	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER122B**	.750	.750	1.000	4.50	.50	.29	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.2L	**NER162C**	1.000	1.000	1.250	5.00	.50	.41	.138	-	1.0	-	-	-	**CM75**	**S310**	7/64	-	-
N.3L	**NER123B**	.750	.750	1.125	4.50	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER163C**	1.000	1.000	1.250	5.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER163D**	1.000	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER853D**	1.250	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER203D**	1.250	1.250	1.500	6.00	.75	.26	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.3L	**NER243D**	1.500	1.500	2.000	6.00	.75	.76	.210	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER164C**	1.000	1.000	1.375	5.00	.75	-	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER164D**	1.000	1.000	1.375	6.00	.75	-	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER204D**	1.250	1.250	1.625	6.00	.75	.27	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.4L	**NER244D**	1.500	1.500	2.000	6.00	.75	.65	.294	-	2.0	-	-	-	**CM73LP**	**S2112**	25 IP	-	-
N.5L	**NER205D**	1.250	1.250	2.000	6.00	1.44	-	.415	-	2.0	-	-	-	**CM81**	**S352**	1/4	-	-
N.6L	**NER206D**	1.250	1.250	1.625	6.00	.75	.27	.300	-	2.0	-	-	-	**CM121**	**S412**	5/32	-	-
N.6L	**NER246D**	1.500	1.500	2.000	6.00	.75	.50	.300	-	2.0	-	-	-	**CM121**	**S412**	5/32	-	-
	Left hand																	
N.2R	**NEL062**	.375	.375	.750	2.50	.50	-	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL082V**	.500	.500	.750	3.50	.50	-	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL102B**	.625	.625	.750	4.50	-	-	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL122B**	.750	.750	1.000	4.50	.50	.29	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.2R	**NEL162C**	1.000	1.000	1.250	5.00	.50	.41	.138	-	1.0	-	-	-	**CM74**	**S310**	7/64	-	-
N.3R	**NEL123B**	.750	.750	1.125	4.50	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL163C**	1.000	1.000	1.250	5.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL163D**	1.000	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL853D**	1.250	1.000	1.250	6.00	.75	-	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL203D**	1.250	1.250	1.500	6.00	.75	.26	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.3R	**NEL243D**	1.500	1.500	2.000	6.00	.75	.76	.210	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL164C**	1.000	1.000	1.375	5.00	.75	-	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL164D**	1.000	1.000	1.375	6.00	.75	-	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL204D**	1.250	1.250	1.625	6.00	.75	.27	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.4R	**NEL244D**	1.500	1.500	2.000	6.00	.75	.65	.294	-	2.0	-	-	-	**CM72LP**	**S2112**	25 IP	-	-
N.5R	**NEL205D**	1.250	1.250	2.000	6.00	1.44	-	.415	-	2.0	-	-	-	**CM80**	**S352**	1/4	-	-
N.6R	**NEL206D**	1.250	1.250	1.625	6.00	.75	.27	.300	-	2.0	-	-	-	**CM120**	**S412**	5/32	-	-

Order example:
NER062

NOTE: F dimension measured over sharp point of NG-style grooving insert.

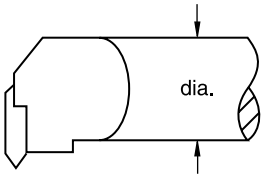
S	32	N	E	R	3	W
1. Bar Type		3. Insert Holding Method		5. Hand of Bar	7. Additional Information	

1. Bar Type

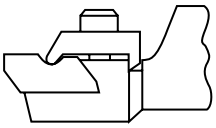


2. Bar Diameter

A two-digit number that indicates the bar diameter in 1/16-inch increments.

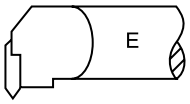


3. Insert Holding Method



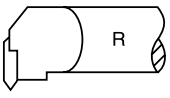
N* – TOP NOTCH

4. Insert Location

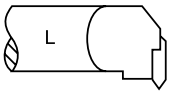


end mount

5. Hand of Bar

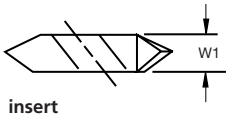


right hand



left hand

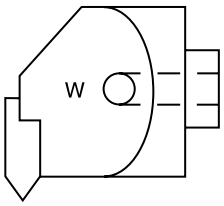
6. Insert Size



insert size	W1
1	.100
2	.150
3	.195
4	.255
5	.380
6	.383
8	.438

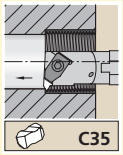
7. Additional Information

through-coolant interchangeable head

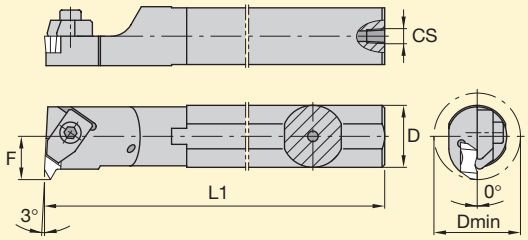


*Kennametal standard only.
NOTE: Right-hand bars use left-hand inserts and clamps.
Left-hand bars use right-hand inserts and clamps.

A-NE



Steel shank with through coolant



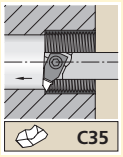
Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**A08NER2**	.730	.500	8	.437	-	1/16-27 NPT	**CM147**	**S39**	7/64
N.2L	**A10NER2**	1.000	.625	10	.500	-	1/8-27 NPT	**CM75**	**S310**	7/64
N.2L	**A12NER2**	1.125	.750	10	.562	-	1/8-27 NPT	**CM75**	**S310**	7/64
N.2L	**A16NER2**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM75**	**S310**	7/64
N.3L	**A16NER3**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A20NER3**	1.750	1.250	14	.875	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A24NER3**	2.000	1.500	14	1.000	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A28NER3**	2.250	1.750	14	1.125	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A32NER3**	2.500	2.000	16	1.250	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.3L	**A40NER3**	3.000	2.500	16	1.500	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A28NER4**	2.500	1.750	14	1.250	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A32NER4**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A36NER4**	3.000	2.250	16	1.500	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.4L	**A40NER4**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM73LP**	**S2112**	25 IP
N.5L	**A32NER5**	2.812	2.000	16	1.406	-	1/4-18 NPT	**CM81**	**S352**	1/4
N.5L	**A40NER5**	3.312	2.500	16	1.656	-	1/4-18 NPT	**CM81**	**S352**	1/4
N.6L	**A32NER6**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM121**	**S412**	5/32
N.6L	**A40NER6**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM121**	**S412**	5/32
	Left hand									
N.2R	**A08NEL2**	.730	.500	8	.437	-	1/16-27 NPT	**CM146**	**S39**	7/64
N.2R	**A10NEL2**	1.000	.625	10	.500	-	1/8-27 NPT	**CM74**	**S310**	7/64
N.2R	**A12NEL2**	1.125	.750	10	.562	-	1/8-27 NPT	**CM74**	**S310**	7/64
N.2R	**A16NEL2**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM74**	**S310**	7/64
N.3R	**A16NEL3**	1.375	1.000	12	.688	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A20NEL3**	1.750	1.250	14	.875	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A24NEL3**	2.000	1.500	14	1.000	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A28NEL3**	2.250	1.750	14	1.125	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A32NEL3**	2.500	2.000	16	1.250	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.3R	**A40NEL3**	3.000	2.500	16	1.500	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A28NEL4**	2.500	1.750	14	1.250	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A32NEL4**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A36NEL4**	3.000	2.250	16	1.500	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.4R	**A40NEL4**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM72LP**	**S2112**	25 IP
N.5R	**A32NEL5**	2.812	2.000	16	1.406	-	1/4-18 NPT	**CM80**	**S352**	1/4
N.5R	**A40NEL5**	3.312	2.500	16	1.656	-	1/4-18 NPT	**CM80**	**S352**	1/4
N.6R	**A32NEL6**	2.750	2.000	16	1.375	-	1/4-18 NPT	**CM120**	**S412**	5/32
N.6R	**A40NEL6**	3.250	2.500	16	1.625	-	1/4-18 NPT	**CM120**	**S412**	5/32

*NOTE: Minimum bore diameter (Dmin) capability varies with thread type and pitch. See page C64 for details.

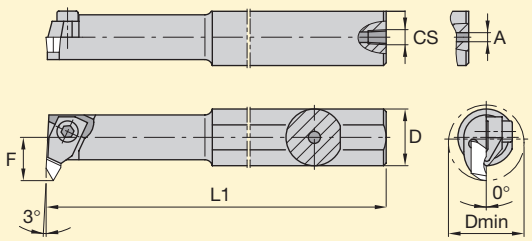
Order example:
A08NER2

NOTE: F dimension measured over sharp point of NG-style grooving insert.

A-NE -1

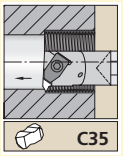


Necked steel shank
with through coolant

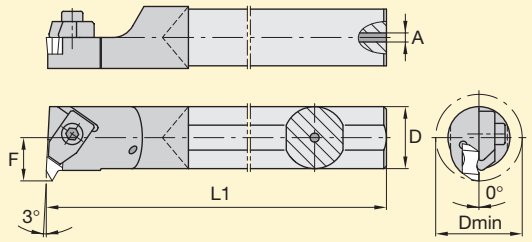


Gage Insert	Catalog number	Dmin*	D	D2	L1	L2	F	A	CS	Clamp	Clamp Screw	Hex (inch)
N.1L	**A06NER1**	.440	.375	.312	6	1.25	.258	.13	-	**CM109**	**S304**	5/64
N.1L	**A08NER1**	.440	.500	.312	8	1.25	.258	-	1/16-27 NPT	**CM109**	**S304**	5/64
N.1L	**A10NER1**	.800	.625	-	10	1.25	.406	-	1/8-27 NPT	**CM109**	**S304**	5/64

E-NE



Carbide shank with
through coolant



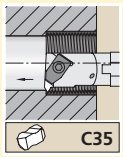
Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**E08NER2**	.730	.500	8	.437	0.19	-	**CM147**	**S39**	7/64
N.2L	**E10NER2**	1.000	.625	10	.500	0.22	-	**CM75**	**S310**	7/64
N.2L	**E12NER2**	1.125	.750	10	.562	0.28	-	**CM75**	**S310**	7/64
N.3L	**E16NER3**	1.375	1.000	12	.688	0.31	-	**CM73LP**	**S2112**	25 IP
	Left hand									
N.2R	**E08NEL2**	.730	.500	8	.437	0.19	-	**CM146**	**S39**	7/64
N.2R	**E10NEL2**	1.000	.625	10	.500	0.22	-	**CM74**	**S310**	7/64
N.2R	**E12NEL2**	1.125	.750	10	.562	0.28	-	**CM74**	**S310**	7/64
N.3R	**E16NEL3**	1.375	1.000	12	.688	0.31	-	**CM72LP**	**S2112**	25 IP

*NOTE: Minimum bore diameter (Dmin) capability varies with thread type and pitch. See page C64 for details.

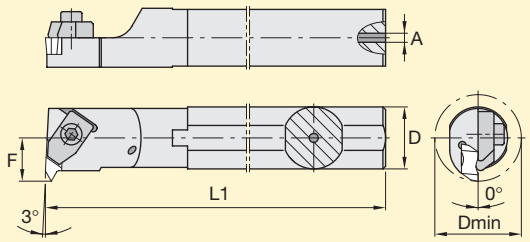
Order example:
A06NER1

NOTE: F dimension measured over sharp point of NG-style grooving insert.

J-NE

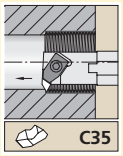


Heavy metal shank
with through coolant

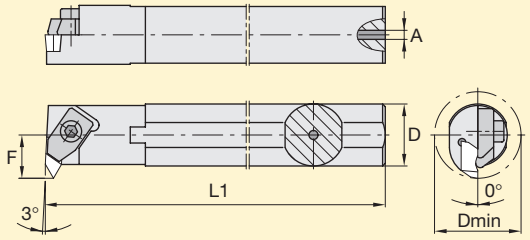


Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)/ Torx Plus
	Right hand									
N.2L	**J08NER2**	.730	.500	8	.437	.16	-	**CM147**	**S39**	7/64
N.2L	**J10NER2**	1.000	.625	8	.500	.16	-	**CM75**	**S310**	7/64
N.2L	**J12NER2**	1.125	.750	8	.562	.16	-	**CM75**	**S310**	7/64
N.2L	**J16NER2**	1.375	1.000	10	.688	.25	-	**CM75**	**S310**	7/64
N.3L	**J16NER3**	1.375	1.000	10	.688	.25	-	**CM73LP**	**S2112**	25 IP
	Left hand									
N.2R	**J08NEL2**	.730	.500	8	.437	.16	-	**CM146**	**S39**	7/64
N.2R	**J10NEL2**	1.000	.625	8	.500	.16	-	**CM74**	**S310**	7/64
N.2R	**J12NEL2**	1.125	.750	8	.562	.16	-	**CM74**	**S310**	7/64
N.2R	**J16NEL2**	1.375	1.000	10	.688	.25	-	**CM74**	**S310**	7/64
N.3R	**J16NEL3**	1.375	1.000	10	.688	.25	-	**CM72LP**	**S2112**	25 IP

J-NE-S



Heavy metal shank
with through coolant



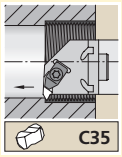
Gage Insert	Catalog number	Dmin*	D	L1	F	A	CS	Clamp	Clamp Screw	Hex (inch)
	Right hand									
N.1L	**J05NER1S**	.440	.313	6	.258	.09	-	**CM109**	**S304**	5/64
N.1L	**J06NER1S**	.480	.375	6	.265	.13	-	**CM109**	**S304**	5/64
N.1L	**J08NER1S**	.600	.500	8	.325	.16	-	**CM109**	**S304**	5/64

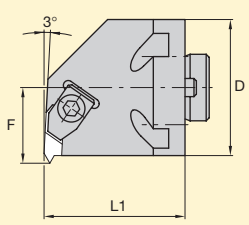
*NOTE: Minimum bore diameter (Dmin) capability varies with thread type and pitch. See page C64 for details.

Order example:
J08NER2

NOTE: F dimension measured over sharp point of NG-style grooving insert.

H-NE





Gage Insert	Catalog number	Dmin*	D	F	L1	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Torx Plus/ Hex (inch)
	Right hand										
N.3L	**H20NER3W**	1.750	1.250	.875	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H24NER3W**	2.000	1.500	1.000	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H28NER3W**	2.250	1.750	1.125	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H32NER3W**	2.500	2.000	1.250	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.3L	**H40NER3W**	3.000	2.500	1.500	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H28NER4W**	2.500	1.750	1.250	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H32NER4W**	2.750	2.000	1.375	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H36NER4W**	3.000	2.250	1.500	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.4L	**H40NER4W**	3.250	2.500	1.625	1.625	-	-	-	**CM73LP**	**S2112**	25IP
N.6L	**H28NER6W**	2.500	1.750	1.250	1.625	-	-	-	**CM121**	**S412**	5/32
N.6L	**H32NER6W**	2.750	2.000	1.375	1.625	-	-	-	**CM121**	**S412**	5/32
N.6L	**H40NER6W**	3.250	2.500	1.625	1.625	-	-	-	**CM121**	**S412**	5/32
N.8L	**H20NER8W**	1.750	1.250	.875	1.625	-	-	-	**CM145**	**S422**	3/16
N.8L	**H24NER8W**	2.000	1.500	1.000	1.625	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
N.8L	**H32NER8W**	2.500	2.000	1.250	1.625	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
	Left hand										
N.3R	**H20NEL3W**	1.750	1.250	.875	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H24NEL3W**	2.000	1.500	1.000	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H28NEL3W**	2.250	1.750	1.125	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H32NEL3W**	2.500	2.000	1.250	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.3R	**H40NEL3W**	3.000	2.500	1.500	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H28NEL4W**	2.500	1.750	1.250	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H32NEL4W**	2.750	2.000	1.375	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H36NEL4W**	3.000	2.250	1.500	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.4R	**H40NEL4W**	3.250	2.500	1.625	1.625	-	-	-	**CM72LP**	**S2112**	25IP
N.6R	**H28NEL6W**	2.500	1.750	1.250	1.625	-	-	-	**CM120**	**S412**	5/32
N.6R	**H32NEL6W**	2.750	2.000	1.375	1.625	-	-	-	**CM120**	**S412**	5/32
N.6R	**H40NEL6W**	3.250	2.500	1.625	1.625	-	-	-	**CM120**	**S412**	5/32
N.8R	**H20NEL8W**	1.750	1.250	.875	1.625	-	-	-	**CM144**	**S422**	3/16
N.8R	**H24NEL8W**	2.000	1.500	1.000	1.625	**SM427**	**S111**	1/16	**CM144**	**S422**	3/16
N.8R	**H32NEL8W**	2.500	2.000	1.250	1.625	**SM427**	**S111**	1/16	**CM144**	**S422**	3/16

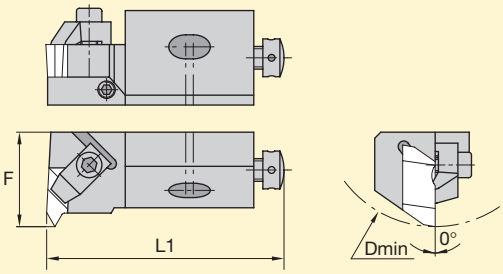
NOTE: For boring adapters, see pages A236 - A238.

*NOTE: Minimum bore diameter (Dmin) capability varies with thread type and pitch. See page C64 for details.

Order example:
H20NER3W

NOTE: F dimension measured over sharp point of NG-style grooving insert.

NE



Gage Insert	Catalog number	Dmin*	F	LI	Clamp	Clamp Screw	Hex (inch/ mm)	Radial Adj. Screw	Hex (inch/ mm)	Axial. Adj. Screw	Hold-Down-Screw	Hex (inch/ mm)
	Right hand											
N.2L	**NER12CA2C**	1.969	.787	2.17	**CM75**	**CS1025**	3/32	**KUAC23**	3/32	**KUAM31**	**S624**	3/16
N.2L	**NER20CA2A**	2.756	.984	2.76	**CM75**	**MS1025**	2.5	**KUAM25**	2.5	**KUAM33**	**MS353**	6
N.2L	**NER20CA2C**	2.756	.984	2.76	**CM75**	**CS1025**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
N.3L	**NER25CA3C**	3.937	1.260	3.94	**CM73**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16
N.4L	**NER25CA4C**	3.937	1.260	3.94	**CM73C**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16
	Left hand											
N.2R	**NEL12CA2C**	1.969	.787	2.17	**CM74**	**CS1025**	3/32	**KUAC23**	3/32	**KUAM31**	**S624**	3/16
N.2R	**NEL20CA2C**	2.756	.984	2.76	**CM74**	**CS1025**	3/32	**KUAC25**	3/32	**KUAM33**	**S634**	1/4
N.3R	**NEL25CA3C**	3.937	1.260	3.94	**CM72**	**CS412**	9/64	**KUAC27**	9/64	**KUAM33**	**S364**	5/16

*NOTE: Minimum bore diameter (Dmin) capability varies with thread type and pitch. See page C64 for details.

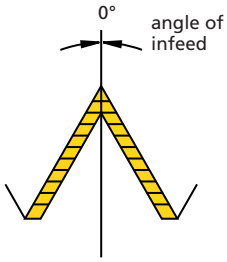
Order example:
NER12CA2C

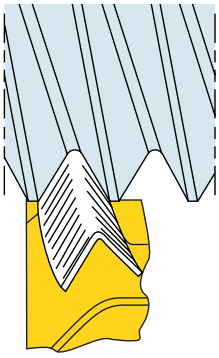
NOTE: F dimension measured over sharp point of NG-style grooving insert.

Infeed Angle

preferred methods

radial





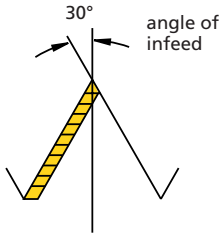
advantage –

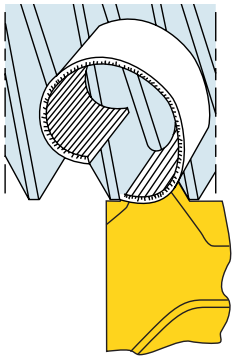
- Cutting on both sides of the thread form places all of the cutting edge in the cut and protects edge from chipping.

disadvantage –

- Tool develops a channel chip that may be difficult to handle.
- Tip chipping occurs when cutting high-tensile materials.
- Burr condition is increased.
- Entire cutting edge is engaged at finish of thread, causing increased tendency to chatter.

flank





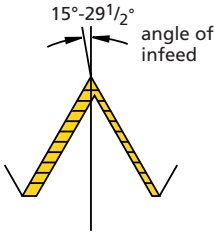
advantage –

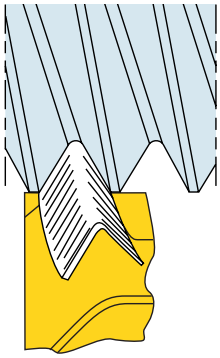
- Cutting with the leading edge of the threading tool gives the chip a definite flow out of the thread form area. This reduces the burr problem on the trailing edge of the tool. To avoid bad surface finish, chipping, or excessive flank wear due to rubbing of the trailing edge, the infeed angle should be 3° to 5° smaller than the angle of the thread. This is a type of modified flank.

disadvantage –

- Trailing edge of threading insert may drag or rub, and tends to chip.
- Torn or poor surface finish threads result when cutting soft, gummy materials like low-carbon steels, aluminum, and stainless steels.

modified flank





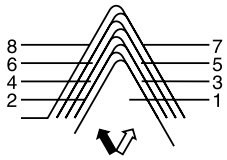
advantage –

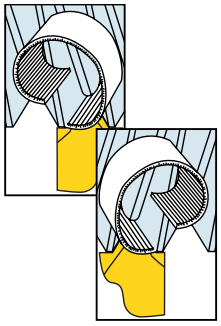
- Tool cuts both sides of thread form and, therefore, is protected from chipping similar to 0° infeed. Channel-type chip develops but uneven chip thickness helps remove the chip similar to flank infeed.
- This is the preferred method, especially when used with a chip control insert.

disadvantage –

- Similar disadvantages as with 0° infeed, although reduced somewhat in magnitude as cutting forces are better equalized and chip flow is much less of a problem.

alternating flank





advantage –

- Increased tool life because both edges are used equally. NOTE: Some machine tools may require special programming techniques to achieve this method of infeed.

disadvantage –

- Difficult to cut on conventional machinery.

Machining Guidelines When Using Chip Control Inserts

Kennametal insert technology brings chip control to your Top Notch and laydown threading operations. The specially-designed geometries effectively break the chip in most applications. Our positive rake design lowers cutting pressures, which in turn lowers damaging heat generation. The result is better tool life. Long, stringy chips no longer mar the workpiece surface finish. The danger to operators when removing long chips from the workpiece and chuck is eliminated. All of these benefits combine to improve the productivity of your threading operations.

Machine Programming

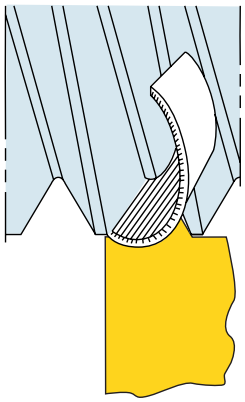
Modern CNC controls allow the programmer to easily adjust infeed angle, the number of passes, and depth of cut for each pass.

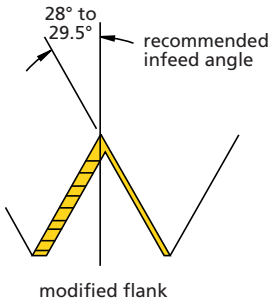
The chip-control threading insert performs best at an infeed angle of 28° to 29.5°, although 20° to 30° is acceptable. Also, it is important to maintain a minimum of .005 inch (0,13 mm) depth of cut on every pass. For more consistent chip control, it is recommended that a constant value between .005 inch - .010 inch (0,13 mm - 0,25 mm) be used.

The Last Pass

Some CNC controls require the last pass to be at a 0° infeed angle. The chip will not break on the last pass at a 0° infeed angle. On most carbon and alloy steels, the last pass can remain at .005 inch (0,13 mm) depth of cut and produce an acceptable finish. For some materials, a .001 inch - .003 inch (0,02 mm - 0,08 mm) spring pass may be used to improve surface finish, however, chipbreaking action may be compromised.

Infeed Angle

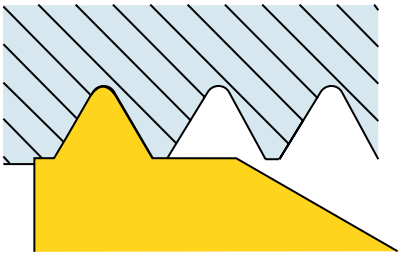




In order to effectively and consistently break the chip, it is important to use an infeed angle between 28° and 29.5°. Do not apply chip-control inserts at infeed angles less than 20°.

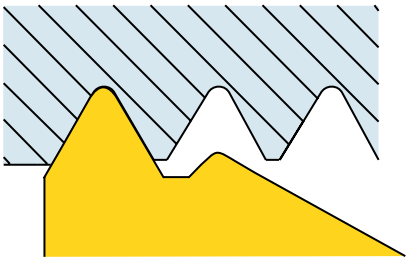
Full vs. Partial Profile – Available for Both TOP NOTCH and LT Insert Styles

full profile



- Thread dimensions are according to established standards.
- High thread concentricity is obtained since the major and minor diameters are machined concurrently.
- Machining costs are reduced since the final threading pass machines the crest exactly, eliminating the need for an extra operation or deburring.

partial profile



- The same insert can be used for various pitches, within a defined range.
- Provides flexibility for non-standard thread forms.

Formulas

	to find	given	formula
inch	sfm	D (inch) rpm	$sfm = \frac{\pi \times D}{12"} \times rpm$
	rpm	D (inch) sfm	$rpm = \frac{sfm \times 12"}{D \times \pi}$
metric	m/min	D (mm) rpm	$m/min = \frac{\pi \times D}{1000} \times rpm$
	rpm	D (mm) m/min	$rpm = \frac{m/min \times 1000}{D \times \pi}$

legend
sfm = surface feet per minute
m/min = meters per minute
rpm = revolutions per minute
D = part diameter
π = 3.1416

maximum cutting speeds

Maximum cutting speed is often limited by the maximum travel speed (ipm or mm/min) of the tool allowed by the machine. Check your maximum speed with the following formulas.

inch formula: maximum cutting speed (sfm) = part diameter (inch) x 3.14 x tpi x $\frac{\text{max ipm (inch/min.)}}{12"}$

metric formula: maximum cutting speed (m/min.) = part diameter (mm) x 3.14 x (1/pitch) x $\frac{\text{max mm/min.}}{1000\ mm}$

Recommendation for Threading Infeed Passes

TPI	48-32	28-24	20-16	14-12	11.5 -9	8-6	5-4	3-2
metric pitch (mm)	0,50-0,75	0,80-1,0	1,25-1,5	1,75-2,0	2,5-3,0	3,5-4,0	4,5-6,0	8,0
Thread Type	recommended number of passes							
common V-thread forms ISO, UN, UNJ, NPT, Whitworth, BSPT, API Rotary Shoulder	4-5	5-6	6-8	8-10	9-12	12-15	14-16	15-25
Acme, Trapez, Round, API Round	-	-	5-6	7-8	10-11	12-13	13-15	18-20
Stub Acme, API Buttress	-	-	5	5-6	7-8	8-10	10-12	14-16
American Buttress	-	-	7-8	9-10	11-12	13-15	17-19	22-24

Maintain minimum .002 inch (0,05 mm) infeed on last passes to avoid workhardening and excessive abrasion of the threading tool, for more detailed recommendations, see technical data on our website at www.kennametal.com

Constant Volume Infeed Values for Threading Operations

In most applications, use of CNC canned cycles produce only marginally successful results. This is the case as these programs do not satisfy the .002 inch (0,05 mm) minimum depth of cut specification recommended.

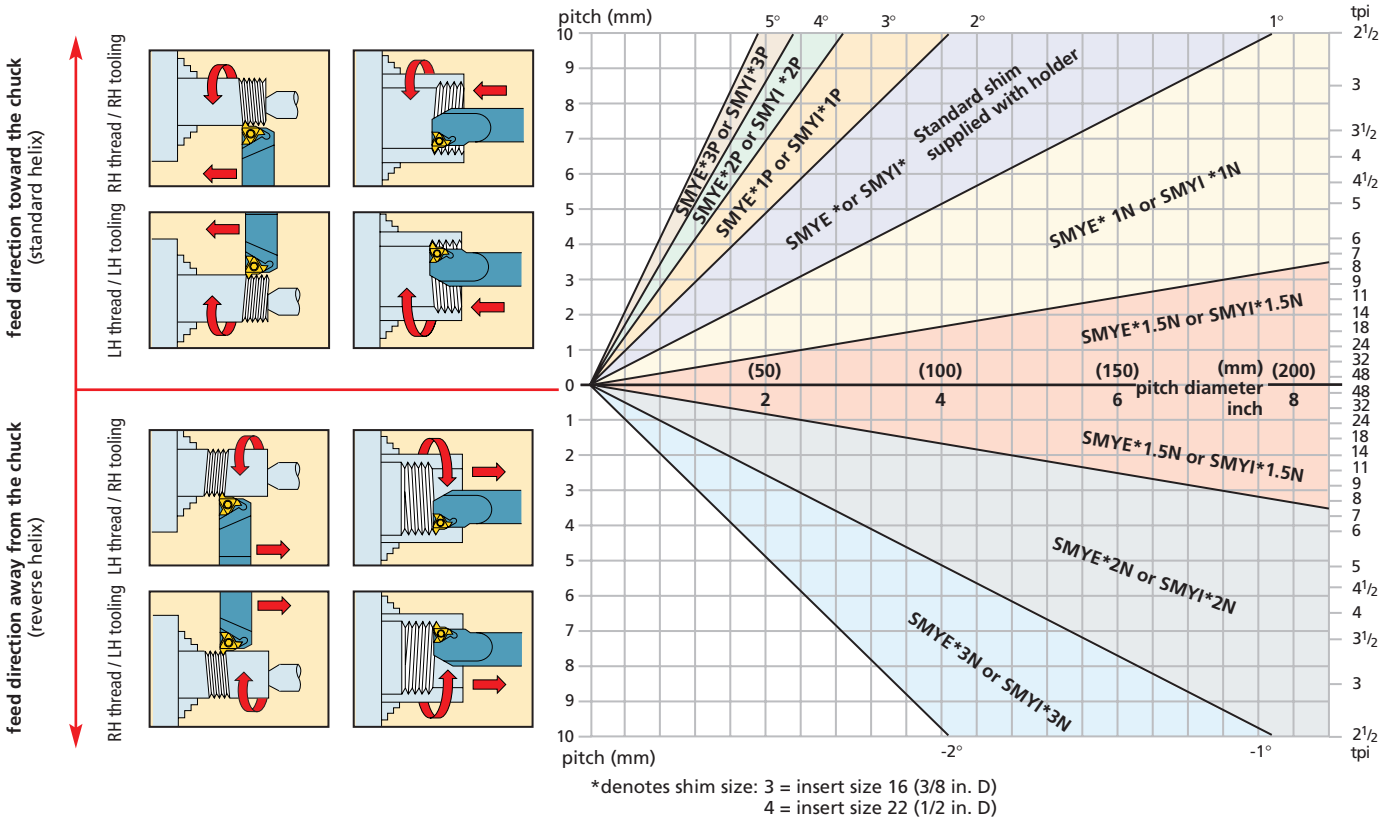
Example:

Infeed per pass formula: accumulated depth = initial doc x $\sqrt{\#\ pass}$
For example, an 8-pitch external thread has a depth of .0789 inch. Twenty-five percent of .0789 = approximately .0197 inch (This is the infeed /doc for the first pass.)

.0197 x $\sqrt{2}$ = .0278
.0278 - .0197 = .0082 (This is the infeed/doc for the second pass.)

.0197 x $\sqrt{3}$ = .0341
.0341 - .0278 = .0063 (This is the infeed/doc for the third pass.)

.0197 x $\sqrt{4}$ = .0394
.0394 - .0341 = .0053 (This is the infeed/doc for the fourth pass.)



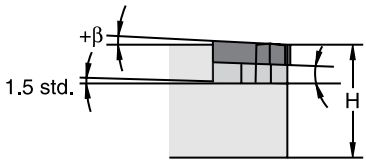
*denotes shim size: 3 = insert size 16 (3/8 in. D)
4 = insert size 22 (1/2 in. D)

NOTE: For multi-start threads, use the lead value instead of the pitch.

Helix Methods

standard helix method:

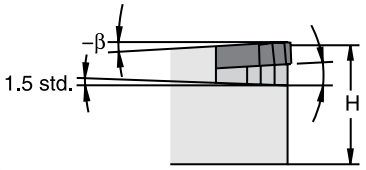
Used when RH thread is cut with RH tool, or LH thread with LH tool.



reverse helix method:

Used when RH thread is cut with LH tool, or when LH thread is cut with RH tool.

Dimension "H" is constant at every shim and insert combination. All toolholders are supplied with 1.5° lead angle.

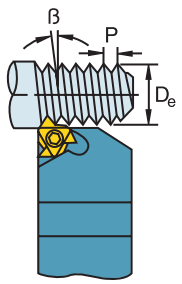


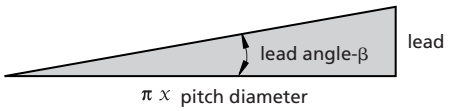
Selection of Shims – LT System
Diagram of Thread Lead Angles

To calculate the lead angle of a given thread, use this formula:

$$\beta = \text{Arctan} \frac{P \times S}{\pi D_e}$$

ß = thread lead angle
D_e = effective pitch diameter of thread (where P = 1/tpi for inch dimensions)
tpi = threads per inch
S = number of starts (= #1 for standard thread)
P = pitch
multiple-start, lead = P x S





Slanted Shim Kit

insert size	shim size (D)	ordering code	contains slanted shims
16	3/8"	ABY3	SM-YE4-2P,1P,1N,2N,3N SM-YI4-2P,1P,1N,2N,3N
22	1/2"	ABY4	SM-YE4-2P,1P,1N,2N,3N SM-YI4-2P,1P,1N,2N,3N

Since you might occasionally need different shims other than those supplied with our standard toolholders, we strongly recommend that shim kits be readily available in every tool shop.

Technical Data

LT Shim Selection Table – Inch

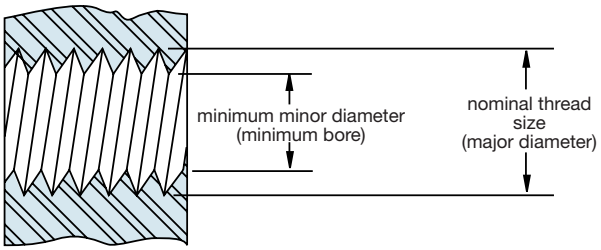
Insert Size	toolholder		Shim Ordering Code							
	external	internal				standard				
LT-16 (3/8")	RH	LH	SM-YE3-3P	SM-YE3-2P	SM-YE3-1P	SM-YE3	SM-YE3-1N	SM-YE3-1.5N	SM-YE3-2N	SM-YE3-3N
	LH	RH	SM-YI3-3P	SM-YI3-2P	SM-YI3-1P	SM-YI3	SM-YI3-1N	SM-YE3-1.5N	SM-YI3-2N	SM-YI3-3N
LT-22 (1/2")	RH	LH	SM-YE4-3P	SM-YE4-2P	SM-YE4-1P	SM-YE4	SM-YE4-1N	SM-YE4-1.5N	SM-YE4-2N	SM-YE4-3N
	LH	RH	SM-YI4-3P	SM-YI4-2P	SM-YI4-1P	SM-YI4	SM-YI4-1N	SM-YI4-1.5N	SM-YI4-2N	SM-YI4-3N
TPI		Pitch (mm)	Pitch Diameter (inch)							
72						.12 - .31	.32 - .84	>.84	.84 - .32	.31 - .12
		0,35				.12 - .30	.31 - .84	>.84	.84 - .31	.30 - .12
64						.14 - .35	.36 - .95	>.95	.95 - .36	.35 - .14
		0,40				.14 - .35	.36 - .96	>.96	.96 - .36	.35 - .14
56		0,45				.16 - .40	.41 - 1.09	>1.09	1.09 - .41	.40 - .16
		0,50			.11 - .16	.17 - .44	.45 - 1.20	>1.20	1.20 - .45	.44 - .17
48					.12 - .17	.18 - .46	.47 - 1.27	>1.27	1.27 - .47	.46 - .18
44					.13 - .19	.20 - .51	.52 - 1.38	>1.38	1.38 - .52	.51 - .20
		0,60		.10 - .12	.13 - .20	.21 - .53	.54 - 1.44	>1.44	1.44 - .54	.53 - .21
40				.11 - .13	.14 - .21	.22 - .56	.57 - 1.52	>1.52	1.52 - .57	.56 - .22
		0,70		.12 - .15	.16 - .23	.24 - .62	.63 - 1.68	>1.68	1.68 - .63	.62 - .24
36				.12 - .15	.16 - .23	.24 - .62	.63 - 1.69	>1.69	1.69 - .63	.62 - .24
		0,75	.11 - .12	.13 - .16	.17 - .25	.26 - .66	.67 - 1.80	>1.80	1.80 - .67	.66 - .26
32			.12 - .13	.14 - .17	.18 - .26	.27 - .70	.71 - 1.90	>1.90	1.90 - .71	.70 - .27
		0,80	.12 - .13	.14 - .17	.18 - .26	.27 - .71	.72 - 1.91	>1.91	1.91 - .72	.71 - .27
28			.14 - .14	.15 - .19	.20 - .30	.31 - .80	.81 - 2.17	>2.17	2.17 - .81	.80 - .31
27			.14 - .15	.16 - .20	.21 - .31	.32 - .83	.84 - 2.25	>2.25	2.25 - .84	.83 - .32
		1,00	.15 - .16	.17 - .21	.22 - .33	.34 - .89	.90 - 2.39	>2.39	2.39 - .90	.89 - .34
24			.16 - .17	.18 - .23	.24 - .35	.36 - .94	.95 - 2.53	>2.53	2.53 - .95	.94 - .36
		1,25	.19 - .20	.21 - .27	.28 - .42	.43 - 1.11	1.12 - 2.99	>2.99	2.99 - 1.12	1.11 - .43
20			.19 - .21	.22 - .27	.28 - .42	.43 - 1.13	1.14 - 3.04	>3.04	3.04 - 1.14	1.13 - .43
18			.21 - .23	.24 - .31	.32 - .47	.48 - 1.26	1.27 - 3.38	>3.38	3.38 - 1.27	1.26 - .48
		1,50	.22 - .25	.26 - .33	.34 - .50	.51 - 1.34	1.35 - 3.59	>3.59	3.59 - 1.35	1.34 - .51
16			.24 - .26	.27 - .35	.36 - .53	.54 - 1.41	1.42 - 3.80	>3.80	3.80 - 1.42	1.41 - .54
		1,75	.26 - .29	.30 - .38	.39 - .59	.60 - 1.56	1.57 - 4.19	>4.19	4.19 - 1.57	1.56 - .60
14			.27 - .30	.31 - .40	.41 - .61	.62 - 1.62	1.63 - 4.34	>4.34	4.34 - 1.63	1.62 - .62
13			.29 - .32	.33 - .43	.44 - .66	.67 - 1.74	1.75 - 4.68	>4.68	4.68 - 1.75	1.74 - .67
		2,00	.30 - .33	.34 - .44	.45 - .67	.68 - 1.78	1.79 - 4.79	>4.79	4.79 - 1.79	1.78 - .68
12			.32 - .35	.36 - .46	.47 - .71	.72 - 1.89	1.90 - 5.07	>5.07	5.07 - 1.90	1.89 - .72
11.5			.33 - .37	.38 - .49	.50 - .74	.75 - 1.97	1.98 - 5.29	>5.29	5.29 - 1.98	1.97 - .75
11			.34 - .38	.39 - .51	.52 - .78	.79 - 2.06	2.07 - 5.53	>5.53	5.53 - 2.07	2.06 - .79
		2,50	.37 - .42	.43 - .55	.56 - .84	.85 - 2.23	2.24 - 5.98	>5.98	5.98 - 2.24	2.23 - .85
10			.38 - .42	.43 - .56	.57 - .86	.87 - 2.27	2.28 - 6.08	>6.08	6.08 - 2.28	2.27 - .87
9			.42 - .47	.48 - .62	.63 - .95	.96 - 2.52	2.53 - 6.75	>6.75	6.75 - 2.53	2.52 - .96
		3,00	.45 - .50	.51 - .66	.67 - 1.02	1.03 - 2.68	2.69 - 7.18	>7.18	7.18 - 2.69	2.68 - 1.03
8			.47 - .53	.54 - .70	.71 - 1.08	1.09 - 2.84	2.85 - 7.60	>7.60	7.60 - 2.85	2.84 - 1.09
		3,50	.52 - .59	.60 - .77	.78 - 1.19	1.20 - 3.13	3.14 - 8.38	>8.38	8.38 - 3.14	3.13 - 1.20
7			.54 - .61	.62 - .80	.81 - 1.23	1.24 - 3.25	3.26 - 8.68	>8.68	8.68 - 3.26	3.25 - 1.24
		4,00	.60 - .67	.68 - .89	.90 - 1.36	1.37 - 3.58	3.59 - 9.57	>9.57	9.57 - 3.59	3.58 - 1.37
6			.63 - .71	.72 - .94	.95 - 1.44	1.45 - 3.79	3.80 - 10.13	>10.13	10.13 - 3.80	3.79 - 1.45
		5,00	.75 - .84	.85 - 1.11	1.12 - 1.70	1.71 - 4.48	4.49 - 11.97	>11.97	11.97 - 4.49	4.48 - 1.71
5			.76 - .86	.87 - 1.13	1.14 - 1.73	1.74 - 4.55	4.56 - 12.16	>12.16	12.16 - 4.56	4.55 - 1.74
4.5			.84 - .95	.96 - 1.26	1.27 - 1.92	1.93 - 5.06	5.07 - 13.51	>13.51	13.51 - 5.07	5.06 - 1.93
		6,00	.90 - 1.01	1.02 - 1.33	1.34 - 2.04	2.05 - 5.37	5.38 - 14.36	>14.36	14.36 - 5.38	5.37 - 2.05
4			.95 - 1.07	1.08 - 1.41	1.42 - 2.16	2.17 - 5.69	5.70 - 15.20	>15.20	15.20 - 5.70	5.69 - 2.17
Inclination Angle			4.5	3.5	2.5	1.5	.5	0	-.5	-1.5
feed direction			standard helix (feed toward the chuck)						reverse helix (feed away from the chuck)	

1. Select TPI or pitch from the left-hand columns.
2. Follow row to specified pitch diameter and the correct feed direction.
3. Follow the column to the top for the required shim based on the toolholder and insert size.

Insert Size	toolholder		Shim Ordering Code (metric mm)							
	external	internal				standard				
LT-16 (3/8")	RH	LH	SM-YE3-3P	SM-YE3-2P	SM-YE3-1P	SM-YE3	SM-YE3-1N	SM-YE3-1.5N	SM-YE3-2N	SM-YE3-3N
	LH	RH	SM-YI3-3P	SM-YI3-2P	SM-YI3-1P	SM-YI3	SM-YI3-1N	SM-YI3-1.5N	SM-YI3-2N	SM-YI3-3N
LT-22 (1/2")	RH	LH	SM-YE4-3P	SM-YE4-2P	SM-YE4-1P	SM-YE4	SM-YE4-1N	SM-YE4-1.5N	SM-YE4-2N	SM-YE4-3N
	LH	RH	SM-YI4-3P	SM-YI4-2P	SM-YI4-1P	SM-YI4	SM-YI4-1N	SM-YI4-1.5N	SM-YI4-2N	SM-YI4-3N
TPI		Pitch (mm)	Pitch Diameter (mm)							
72						3,1 - 8	8 - 21,4	> 21,4	21,4 - 8	8 - 3,1
		0,35				3 - 8	8 - 21,3	> 21,3	21,3 - 8	8 - 3
64						3,4 - 9	9 - 24,1	> 24,1	24,1 - 9	9 - 3,4
		0,40				3,5 - 9,1	9,1 - 24,3	> 24,3	24,3 - 9,1	9,1 - 3,5
56		0,45				3,9 - 10,3	10,3 - 27,6	> 27,6	27,6 - 10,3	10,3 - 3,9
		0,50			2,8 - 4,3	4,3 - 11,4	11,4 - 30,4	> 30,4	30,4 - 11,4	11,4 - 4,3
48					3 - 4,6	4,6 - 12,1	12,1 - 32,2	> 32,2	32,2 - 12,1	12,1 - 4,6
44					3,3 - 5	5 - 13,2	13,2 - 35,1	> 35,1	35,1 - 13,2	13,2 - 5
		0,60		2,6 - 3,4	3,4 - 5,2	5,2 - 13,7	13,7 - 36,5	> 36,5	36,5 - 13,7	13,7 - 5,2
40				2,8 - 3,6	3,6 - 5,5	5,5 - 14,5	14,5 - 38,6	> 38,6	38,6 - 14,5	14,5 - 5,5
		0,70		3 - 4	4 - 6,1	6,1 - 16	16 - 42,6	> 42,6	42,6 - 16	16 - 6,1
36				3,1 - 4	4 - 6,1	6,1 - 16,1	16,1 - 42,9	> 42,9	42,9 - 16,1	16,1 - 6,1
		0,75	2,8 - 3,2	3,3 - 4,3	4,3 - 6,5	6,5 - 17,1	17,1 - 45,6	> 45,6	45,6 - 17,1	17,1 - 6,5
32			3 - 3,4	3,4 - 4,5	4,5 - 6,9	6,9 - 18,1	18,1 - 48,3	> 48,3	48,3 - 18,1	18,1 - 6,9
		0,80	3 - 3,5	3,5 - 4,6	4,6 - 6,9	6,9 - 18,2	18,2 - 48,6	> 48,6	48,6 - 18,2	18,2 - 6,9
28			3,4 - 3,9	3,9 - 5,2	5,2 - 7,9	7,9 - 20,7	20,7 - 55,1	> 55,1	55,1 - 20,7	20,7 - 7,9
27			3,6 - 4,1	4,1 - 5,4	5,4 - 8,2	8,2 - 21,4	21,4 - 57,2	> 57,2	57,2 - 21,4	21,4 - 8,2
		1,00	3,8 - 4,3	4,3 - 5,7	5,7 - 8,7	8,7 - 22,8	22,8 - 60,8	> 60,8	60,8 - 22,8	22,8 - 8,7
24			4 - 4,6	4,6 - 6	6 - 9,2	9,2 - 24,1	24,1 - 64,3	> 64,3	64,3 - 24,1	24,1 - 9,2
		1,25	4,7 - 5,4	5,4 - 7,1	7,1 - 10,8	10,9 - 28,5	28,5 - 76	> 76	76 - 28,5	28,5 - 10,8
20			4,8 - 5,5	5,5 - 7,2	7,2 - 11	11 - 28,9	29 - 77,2	> 77,2	77,2 - 28,9	29 - 11
18			5,3 - 6,1	6,1 - 8	8 - 12,2	12,2 - 32,2	32,2 - 85,8	> 85,8	85,8 - 32,2	32,2- 12,2
		1,50	5,7 - 6,5	6,5 - 8,5	8,5 - 13	13 - 34,2	34.2 - 91.2	> 91,2	91,2 - 34,2	34,2 - 13
16			6 - 6,9	6,9 - 9	9 - 13,8	13,8 - 36,2	36,2 - 96,5	> 96,5	96,5 - 36,2	36,2 - 13,8
		1,75	6,6 - 7,6	7,6 - 10	10 - 15,2	15,2 - 39,9	39,9 - 106,4	> 106,4	106,4 - 39,9	39,9 - 15,2
14			6,9 - 7,9	7,9 - 10,3	10,3 - 15,7	15,7 - 41,4	41,4 - 110,3	> 110,3	110,3 - 41,4	41,4 - 15,7
13			7,4 - 8,5	8,5 - 11,1	11,1 - 17	17 - 44,5	44,5 - 118,8	> 118,8	118,8 - 44,5	44,5 - 17
		2,00	7,6 - 8,7	8,7 - 11,4	11,4 - 17,4	17,4 - 45,6	45,6 - 121,6	> 121,6	121,6 - 45,6	45,6 - 17,4
12			8 - 9,2	9,2 - 12	12,1 - 18,4	18,4 - 48,2	48,3 - 128,7	> 128,7	128,7 - 48,2	48,3 - 18,4
11.5			8,4 - 9,6	9,6 - 12,6	12,6 - 19,2	19,2 - 50,3	50,3 - 134,3	> 134,3	134,3 - 50,3	50,3 - 19,2
11			8,8 - 10	10 - 13,1	13,1 - 20	20 - 52,6	52,6 - 140,4	> 140,4	140,4 - 52,6	52,6 - 20
		2,50	9,5 - 10,8	10,8 - 14,2	14,2 - 21,7	21,7 - 57	57 - 152	> 152	152 - 57	57 - 21,7
10			9,6 - 11	11 - 14,5	14,5 - 22	22 - 57,9	57,9 - 154,4	> 154,4	154,4 - 57,9	57,9 - 22
9			10,7 - 12,2	12,2 - 16,1	16,1 - 24,5	24,5 - 64,3	64,3 - 171,6	> 171,6	171,6 - 64,3	64,3 - 24,5
		3,00	11,4 - 13	13 - 17,1	17,1 - 26	26 - 68,4	68,4 - 182,4	> 182,4	182,4 - 68,4	68,4 - 26
8			12 - 13,8	13,8 - 18,1	18,1 - 27,6	27,6 - 72,4	72,4 - 193	> 193	193 - 72,4	72,4 - 27,6
		3,50	13,3 - 15,2	15,2 - 19,9	19,9 - 30,4	30,4 - 79,8	79,8 - 212,8	> 212,8	212,8 - 79,8	79,8 - 30,4
7			13,8 - 15,7	15,7 - 20,7	20,7 - 31,5	31,5 - 82,7	82,7 - 220,6	> 220,6	220,6 - 82,7	82,7 - 31,5
		4,00	15,2 - 17,3	17,3 - 22,8	22,8 - 34,7	34,7 - 91,2	91,2 - 243,2	> 243,2	243,2 - 91,2	91,2 - 34,7
6			16 - 18,3	18,3 - 24,1	24,1 - 36,7	36,7 - 96,5	96,5 - 257,4	> 257,4	257,4 - 96,5	96,5 - 36,7
		5,00	19 - 21,7	21,7 - 28,5	28,5 - 43,4	43,4 - 114	114 - 304	> 304	304 - 114	114 - 43,4
5			19,3 - 22	22 - 28,9	28,9 - 44,1	44,1 - 115,8	115,8 - 308,8	> 308,8	308,8 - 115,8	115,8 - 44,1
4.5			21,4 - 24,5	24,5 - 32,1	32,1 - 49	49 - 128,7	128,7 - 343,1	> 343,1	343,1 - 128,7	128,7 - 49
		6,00	22,7 - 26	26 - 34,2	34,2 - 52,1	52,1 - 136,8	136,8 - 364,8	> 364,8	364,8 - 136,8	136,8 - 52,1
4			24,1 - 27,5	27,5 - 36,2	36,2 - 55,1	55,1 - 144,8	144,8 - 386	> 386	386 - 144,8	144,8 - 55,1
Inclination Angle			4.5	3.5	2.5	1.5	.5	0	-.5	-1.5
feed direction			standard helix (feed toward the chuck)						reverse helix (feed away from the chuck)	

1. Select TPI or pitch from the left-hand columns.
2. Follow row to specified pitch diameter and the correct feed direction.
3. Follow the column to the top for the required shim based on the toolholder and insert size.

The following charts list the largest thread pitch that can be applied on internal applications using TOP NOTCH threading inserts for 60° V-threading and Acme threading. For Buttress threading, see pages C67-C68.



Inch-sized 60° V-Threading Limits

**internal threading limitations
NT-1, NT-2 V-threading inserts**

threads per inch	nominal thread size		minimum minor diameter (inch)	
	NT-2	NT-1	NT-2	NT-1
6	1 7/8	–	1.695	–
7	1 3/4	–	1.595	–
8	1 5/8	–	1.490	–
9	1 9/16	–	1.442	–
10	1 1/2	15/16	1.392	.830
11	1 7/16	15/16	1.339	.830
11 1/2	1 3/8	15/16	1.281	.830
12	1 3/8	9/16	1.285	.472
13	1 5/16	9/16	1.229	.472
14	1 1/4	9/16	1.173	.472
16	1 1/4	9/16	1.182	.472
18	1 1/8	9/16	1.065	.472
20	1 1/8	1/2	1.071	.440
24*	1 1/16	1/2	1.017	.440

*Twenty-four threads per inch and finer can be cut with an NT-2 insert provided the minor diameter is 1.000 inch or larger (.440 inch or larger with NT-1).

**internal threading limitations
NT-3 and 4 V-threading inserts**

threads per inch	nominal thread size	minimum minor diameter (inch)
4**	3	2.729
4 1/2**	2 7/8	2.634
5	2 3/4	2.534
6	2 1/2	2.320
7	2 1/4	2.095
8	2	1.865
9	1 15/16	1.817
10	1 7/8	1.767
11	1 13/16	1.714
11 1/2	1 3/4	1.656
12	1 3/4	1.660
13	1 5/8	1.542
14	1 9/16	1.485
16*	1 7/16	1.370

*Sixteen threads per inch and finer can be cut provided minor diameter is 1.370 inch or larger.
**NT-4 insert only.

Metric 60° V-Threading Limits

Internal threading limitations NT-1 and NT-2 60° V-threading

thread pitch (mm)	nominal thread size		minimum minor thread diameter (mm)	
	NT-2	NT-1	NT-2	NT-1
4,00	M48 x 4.00	-	43,67	-
3,00	M42 x 3.00	-	38,75	-
2,50	M39 x 2.50	M24 x 2,50	36,29	21,29
2,00	M33 x 2.00	M15 x 2,00	30,84	12,84
1,75	M32 x 1.75	M15 x 1,75	30,11	13,11
1,50	M32 x 1.50	M15 x 1,50	30,38	13,38
1,25	M29 x 1.29	M14 x 1,25	27,65	12,65
1,00*	M27 x 1.00	M14 x 1,00	25,92	12,92
0,75	M22 x 0.75	M12 x 0,75	21,19	11,19

*Thread pitch of 1 mm and less can be cut with an NT-2 insert provided the core thread diameter is 25 mm or larger (11 mm or larger with NT-1).

Internal threading limitations NT-3 and NT-4 60° V-threading

thread pitch (mm)	nominal thread size	minimum minor thread diameter (mm)
6,00**	M76 x 6.00	69,50
5,50**	M73 x 5.50	67,05
5,00	M70 x 5.00	64,59
4,00	M64 x 4.00	59,67
3,00	M52 x 3.00	48,75
2,50	M48 x 2.50	45,29
2,00	M42 x 2.00	39,84
1,75	M40 x 1.75	38,11
1,50*	M38 x 1.50	36,38

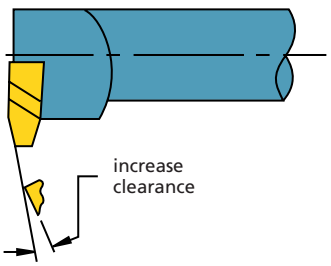
*Thread pitch of 1,5 mm and less can be cut provided core thread diameter is 35 mm or larger.
**NT-4-insert only.

Acme Threading Limits

**internal threading limitations
NA and NAS-2, 3, 4, and 6 Acme threading inserts**

threads per inch	nominal thread size	minimum minor diameter	
		inch	mm
2**	5	4.500	114,3
2 1/2**	4 1/2	4.100	104,1
3**	4	3.665	93,1
4	3 1/2	3.250	82,6
5	3	2.800	71,1
6	2 1/2	2.333	59,3
8	2 1/4	2.125	54,0
10	2	1.900	48,3
12	1 3/4	1.667	42,4
14	1 5/8	1.554	39,5
16*	1 1/2	1.438	36,5

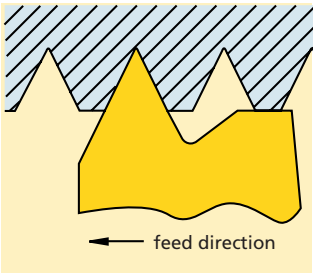
*Sixteen threads per inch and finer can be cut provided minor diameter is 1.438 inch (36,5 mm) or larger.
**NA-6 insert only.



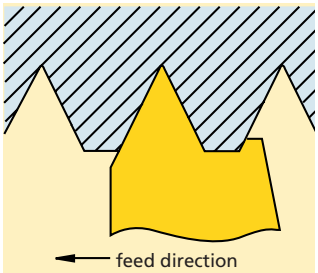
Additional secondary clearance can be ground on leading edge of insert to provide sufficient helical clearance for machining coarser threads and multiple start threads.

Modified standard inserts may be furnished for machining threads outside of the limits shown.

60° V-Thread Crest Turning Application Data



NTC crest turning insert for 12 threads per inch and finer (P ≤ 2,0 mm)



NTC crest turning insert for 11 threads per inch and coarser (P ≥ 3,0 mm)

NOTE: NTC inserts automatically control root to crest dimensions. Therefore, in setting up threading operations with NTC inserts, one need only check the OD or ID at the thread crest for correct dimensions.

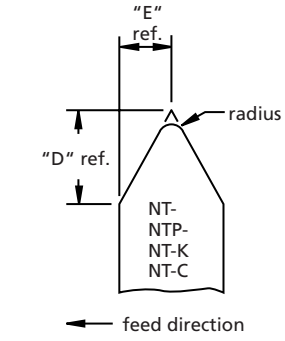
"J" thread note for catalog

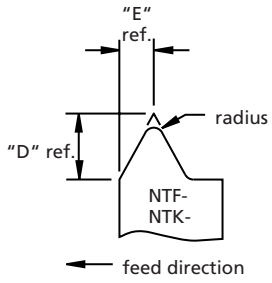
The controlled root radius thread form (MIL-S-8879A) is defined for the external thread only. To machine the corresponding internal thread, choose any insert that will cut a unified class 2B thread, then bore the minor diameter to size. Refer to MIL-S-8879A for the correct "J" thread minor diameter values.

Controlled Root Radius Specifications for UNJ Threads

insert catalog number	nose radius on insert (inch)	thread radius per MIL-S-8879A (inch)
NJ-3020R/L8 NJP-3020R/L8	.0188/.0198	.0188/.0226
NJ-3014R/L12 NJP-3014R/L12	.0125/.0135	.0125/.0150
NJ-3010R/L16 NJP-3010R/L16	.0094/.0104	.0094/.0113
NJF-3012R/L14 NJK-3012R/L14	.0107/.0117	.0107/.0129
NJF-3010R/L16 NJK-3010R/L16	.0094/.0104	.0094/.0113
NJF-3009R/L18 NJK-3009R/L18	.0083/.0093	.0083/.0100
NJF-3008R/L20 NJK-3008R/L20	.0075/.0085	.0075/.0090
NJF-3007R/L24 NJK-3007R/L24	.0063/.0073	.0063/.0075
NJF-3006R/L28 NJK-3006R/L28	.0054/.0064	.0054/.0064
NJF-3005R/L32 NJK-3005R/L32	.0047/.0056	.0047/.0056

60° V-Thread Application Data





insert description	insert	"D" ref.** (inch)	"E" ref.** (inch)	recommended threads per inch* (TPI)		recommended metric thread pitch (mm)	
				external	internal	external	internal
	NT-1	.075	.044	–	24 tpi to 12 tpi	–	1,00 to 2,00
	NT-2	.113	.075	36 tpi to 8 tpi	20 tpi to 7 tpi	0,70 to 3,00	1,25 to 3,50
	NT-2-K	.113	.075	36 tpi to 8 tpi	20 tpi to 7 tpi	0,70 to 3,00	1,25 to 3,50
	NTF-2	.062	.040	44 tpi to 14 tpi	24 tpi to 12 tpi	0,60 to 1,75	1,00 to 2,00
	NTK-2	.062	.040	44 tpi to 14 tpi	24 tpi to 12 tpi	0,60 to 1,75	1,00 to 2,00
	NTP-2	.113	.075	36 tpi to 8 tpi	20 tpi to 7 tpi	0,70 to 3,00	1,25 to 3,50
	NT-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi	1,25 to 4,00	2,00 to 5,00
	NT-3-K	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi	1,25 to 4,00	2,00 to 5,00
	NT-3-C	.148	.097	11 tpi to 6 tpi	6 tpi (only)	2,50 to 4,00	4,00 only
	NT-3-CK	.148	.097	11 tpi to 6 tpi	6 tpi (only)	2,50 to 4,00	4,00 only
	NTF-3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi	0,60 to 2,50	1,00 to 2,50
	NTK-3	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi	0,60 to 2,50	1,00 to 2,50
	NTP-3	.148	.097	20 tpi to 6 tpi	12 tpi to 5 tpi	1,25 to 4,00	2,00 to 5,00
	NT-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi	1,25 to 6,25	2,00 to 6,25
	NT-4-K	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi	1,25 to 6,25	2,00 to 6,25
	NT-4-C	.196	.127	11 tpi to 4 1/2 tpi	6 tpi to 4 1/2 tpi	2,50 to 5,50	4,00 to 5,50
	NT-4-CK	.196	.127	11 tpi to 4 1/2 tpi	6 tpi to 4 1/2 tpi	2,50 to 5,50	4,00 to 5,50
	NTF-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi	0,60 to 2,50	1,00 to 2,50
	NTK-4	.083	.054	44 tpi to 10 tpi	24 tpi to 9 tpi	0,60 to 2,50	1,00 to 2,50
	NTP-4	.196	.127	20 tpi to 4 tpi	12 tpi to 4 tpi	1,25 to 6,25	2,00 to 6,25

*Based on maximum insert radius size and class 2A and 2B thread specifications.
**For metric D and E dimensions, multiply by 25.4

API Thread Form for the LT and TOP NOTCH Threading Systems

API Thread Forms
Insert Application Chart for API Rotary Shouldered Connections

thread form	Kennametal insert		tool joint application	minimum box size*
	cresting	non-cresting		
V-.038R 2" tpf 4 tpi	NDC-4038R/L2 LT22-E/NR4API382	ND-3038R/L	2-3/8 API internal flush 2-7/8 API internal flush 3-1/2 API internal flush 4 API internal flush 4-1/2 API internal flush 5-1/2 API internal flush 6-5/8 API internal flush 4 API full hole API #23 API #26 API #31 API #35 API #38 API #40 API #44 API #46 API #50	API #31 2-7/8 IF
V-.038R 3" tpf 4 tpi	NDC-4038R/L3 LT22-E/NR4API383	ND-3038R/L	API #56 API #61 API #70 API #77	API #56
V-.050 2" tpf 4 tpi	NDC-4050R/L2 LT22-E/NR4API502	ND-4050R/L	5-1/2 API full hole 6-5/8 API regular 6-5/8 API full hole	5-1/2 API full hole
V-.050 3" tpf 4 tpi	NDC-4050R/L3 LT22-E/NR4API503	ND-4050R/L	5-1/2 API regular 7-5/8 API regular 8-5/8 API regular	5-1/2 API regular
V-.040 3" tpf 5 tpi	NDC-3040R/L3 NDC-4040R/L3 LT22-E/NR5API403	ND-3040R/L ND-4040R/L	2-3/8 API regular 2-7/8 API regular 3-1/2 API regular 4-1/2 API regular	3-1/2 API regular

*Minimum box size that can be threaded with a standard Top Notch insert due to minimum bore requirement.

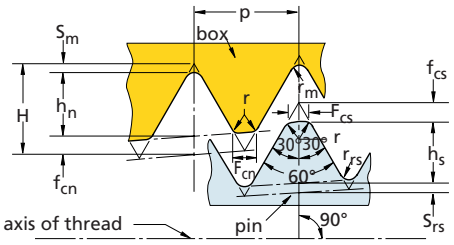
API Thread Forms
Product Thread Dimensions – Rotary Shouldered Connections (inch)

thread form	taper in. per ft.	thread height, not truncated H	thread height, truncated $h_n = h_s$	root truncation $S_m = S_{rs}$ $f_m = f_{rs}$	crest truncation $f_{cn} = f_{cs}$	width of flat		root radius $r_m = r_{rs}$	radius at thread corners r	pitch p
						crest $f_{cn} = f_{cs}$	crest $f_m = f_{rs}$			
V-.038R	2	.216005	.121844	.038000	.056161	.065	—	.038	.015	.250
V-.038R	3	.215379	.121381	.038000	.055998	.065	—	.038	.015	
V-.040	3	.172303	.117842	.020000	.034461	.040	—	.020	.015	.200
V-.050	3	.215379	.147303	.025000	.043076	.050	—	.025	.015	.250
V-.050	2	.216005	.147804	.025000	.043201	.050	—	.025	.015	

all dimensions in inches

V-.040 and V-.050 Product Thread Form

taper shown exaggerated

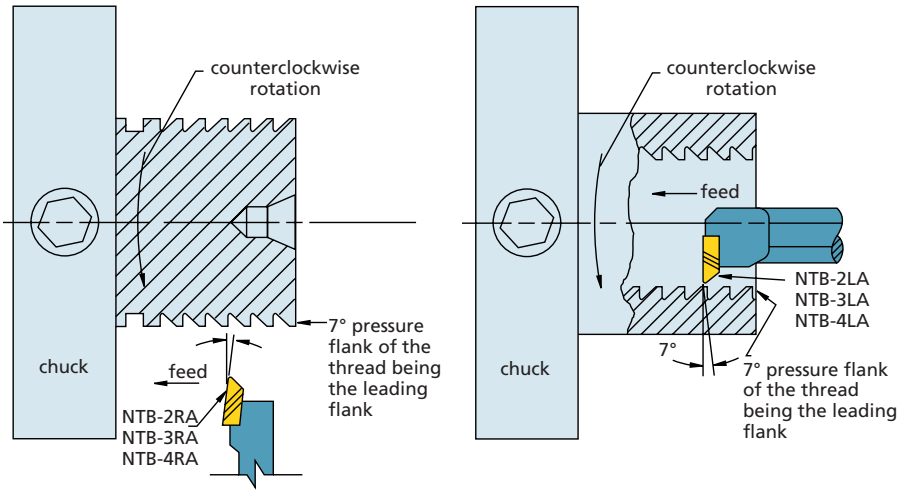


Casing and Tubing Round Thread (Height Dimensions)

thread element		10 threads per inch p = .1000	8 threads per inch p = .1250
H	= .866p	.08660	.10825
$H_s = h_n$	= .626p – .007	.05560	.07125
$S_{rs} = S_m$	= .120p + .002	.01400	.01700
$S_{cs} = S_{cn}$	= .120p + .005	.01700	.02000

American Buttress Application Guidelines for the TOP NOTCH Threading System

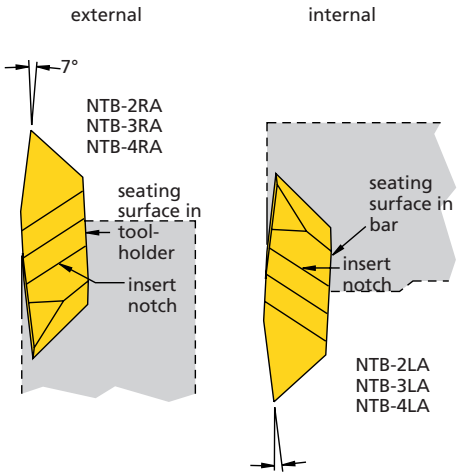
American Buttress (7° Pressure Flank Leading) NTB-A Inserts - PUSH-type



external Buttress
7° pressure flank leading

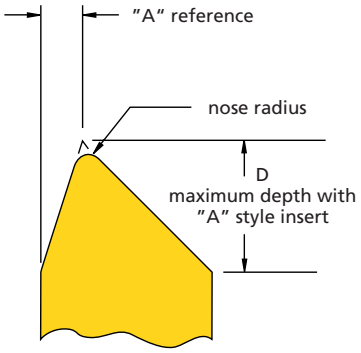
internal Buttress
7° pressure flank leading

Insert versus Toolholder Orientation



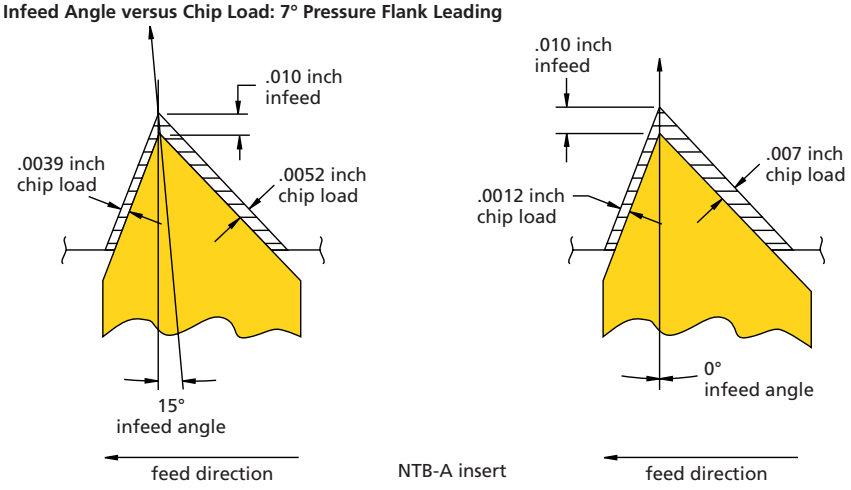
7° pressure flank leading

Reference Dimensions



insert	D (inch)	"A" ref. (inch)	nose radius (inch)	pitch based on maximum radius
NTB-2A	.133	.024	.002-.004	16-20 tpi
NTB-3A	.171	.031	.005-.008	8-16 tpi
NTB-4A	.218	.049	.008-.012	4-6 tpi

Infeed Angle versus Chip Load: 7° Pressure Flank Leading



NOTE: For balanced chip load, 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2A Buttress threading inserts

threads per inch	nominal thread size	minimum minor diameter (inch)
8	1 3/4	1.600
10	1 5/8	1.505
12	1 1/2	1.400
16	1 1/4	1.175
20	1 1/16	1.002

internal threading limitations
NTB-3 and 4A Buttress threading inserts

threads per inch	nominal thread size	minimum minor diameter (inch)
4*	2 1/2	2.200
5	2 1/4	2.010
6	2	1.800
8	1 3/4	1.600
10	1 5/8	1.505
12**	1 1/2	1.400

*NTB-4A insert only
**16 or 20 threads per inch can be cut provided minor diameter is 1.375 inch or larger.

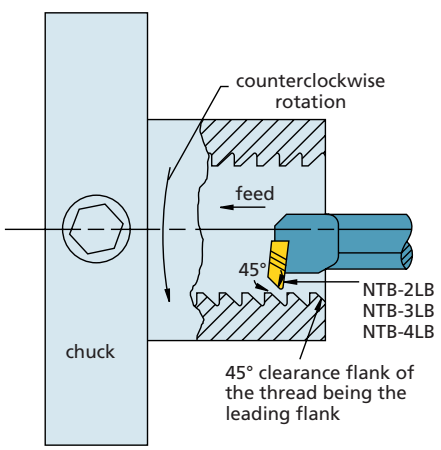
Threads Per Inch versus Maximum Root Radius Chart (inch)

threads per inch	20	16	12	10	8	6	5	4	3	2 1/2	2	1 1/2	1 1/4	1
maximum root radius	.0036	.0045	.0059	.0071	.0089	.0119	.0143	.0179	.0238	.0286	.0357	.0476	.0572	.0714

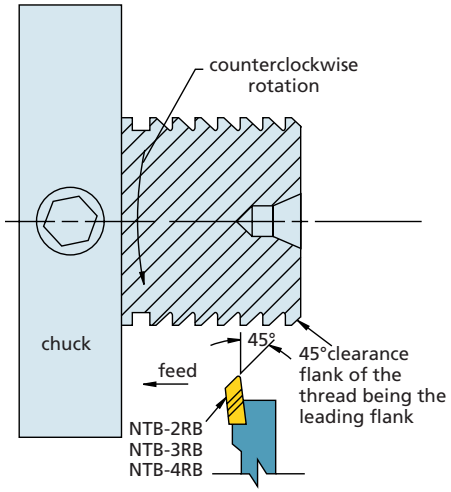
NOTE: Special Buttress forms are available upon request.

American Buttress Application Guidelines for the TOP NOTCH System

American Buttress (45° Clearance Flank Leading): NTB-B Inserts - PULL-type

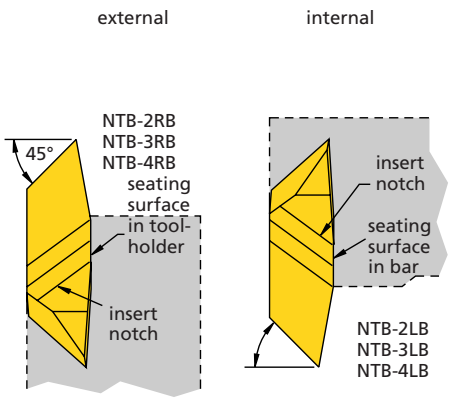


internal Buttress
45° clearance flank leading



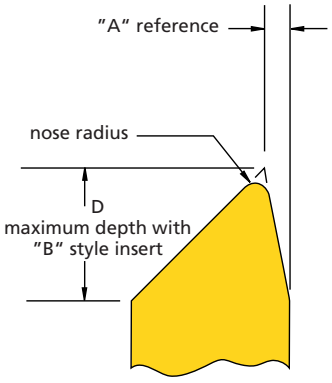
external Buttress
45° clearance flank leading

Insert versus Toolholder Orientation



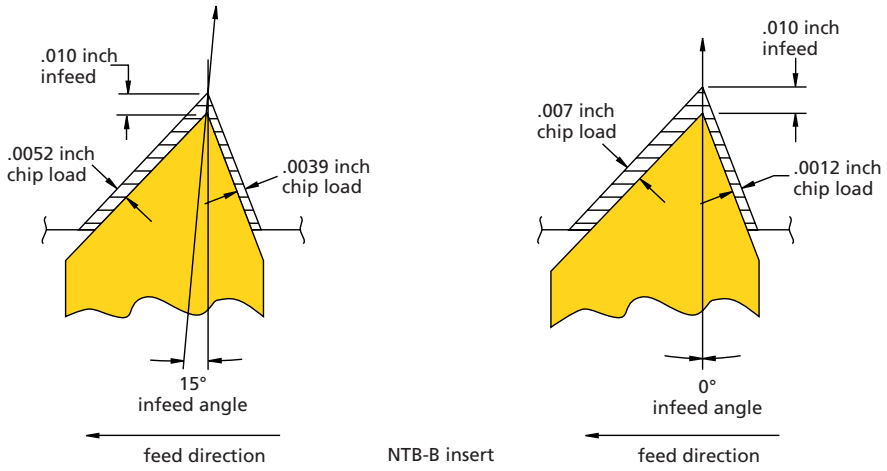
45° clearance flank leading

Reference Dimensions



insert	D (inch)	"A" ref. (inch)	nose radius (inch)	pitch based on maximum radius
NTB-2B	.133	.024	.002-.004	16-20 tpi
NTB-3B	.171	.031	.005-.008	8-16 tpi
NTB-4B	.218	.049	.008-.012	4-6 tpi

Infeed Angle versus Chip Load: 45° Clearance Flank Leading



NOTE: For balanced chip load, a reverse 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2B Buttress threading insert

threads per inch	nominal thread size	minimum minor diameter (inch)
8	1 3/4	1.600
10	1 5/8	1.505
12	1 1/2	1.400
16	1 1/4	1.175
20	1 1/16	1.002

internal threading limitations
NTB-3 and 4B Buttress threading insert

threads per inch	nominal thread size	minimum minor diameter (inch)
4*	2 7/8	2.575
5	2 3/4	2.510
6	2 3/8	2.175
8	2 1/8	1.975
10	1 7/8	1.755
12	1 5/8	1.525
16	1 1/2	1.407
20	1 7/16	1.378

*NTB-4B insert only

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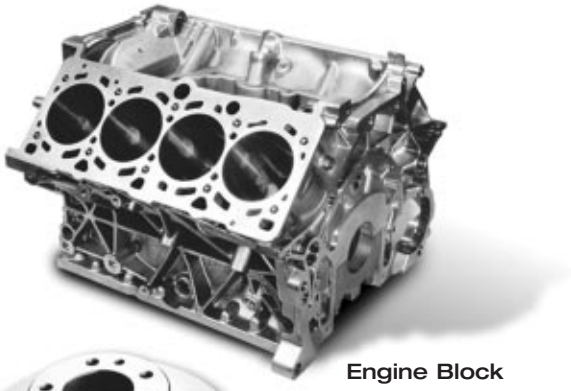
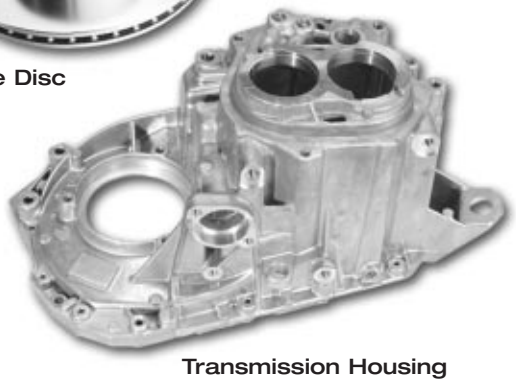


Engine Block

Brake Disc



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Application-Specific Tools

TOP NOTCH Profiling **D2**

KENNA PERFECT D2
Inserts D4
Toolholders D9
Boring Bars and Heads D12

K-LOCK **D18**

Inserts D18
Toolholders D20

KENDEX Mini **D22**

Inserts D22
Boring Bars D24

1st Step – Select the Insert Geometry

Negative Inserts

▼ Roughing

NP.13M..R, NP.332

▼▼ Medium Machining

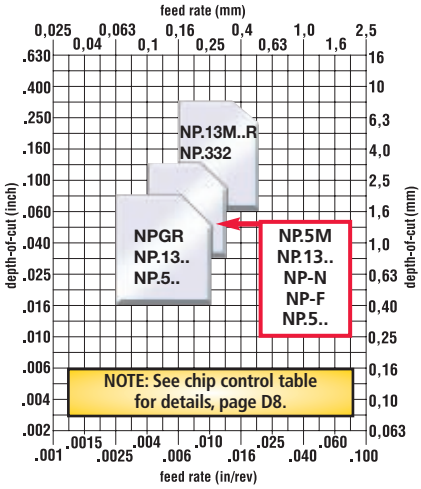
NP.5M, NP.13..,
NP-N, NP-F, NP.5..

▼▼▼ Finishing

NPGR

▼▼▼ Finishing

NP.13.., NP.5..



Positive Inserts

▼▼ Medium Machining

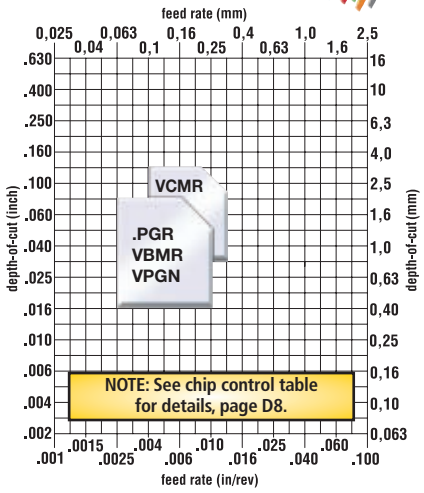
VCMR

▼▼▼ Finishing

.PGR, VBMR

▼▼▼ Finishing

VPGN



2nd Step – Select the Grade

Cutting Condition		Steel ▼▼▼	Steel ▼▼	Steel ▼	Stainless Steel ▼▼▼	Stainless Steel ▼▼	Stainless Steel ▼
heavily interrupted cut		KC9125	KC8050	KC8050	KC9225	KC8050	KC8050
lightly interrupted cut		KC9110	KC9125	KC8050	KC5010	KC5025	KC5025
varying depth of cut, casting or forging skin		KT315	KC9125	KC9125	KT315	KC9225	KC9225
smooth cut, pre-turned surface		KT315	KC9110	KC9110	KT315	KC5010	KC9225

Cutting Condition		Cast Iron ▼▼▼	Cast Iron ▼▼	Cast Iron ▼	Non-Ferrous ▼▼▼	Non-Ferrous ▼▼	Non-Ferrous ▼
heavily interrupted cut		KC9315	KC8050	KC8050	KC5010	KC5010	KC5010
lightly interrupted cut		KC9315	KC9315	KC8050	KC5410/KD100	KC5010	KC5010
varying depth of cut, casting or forging skin		KC5010	KC9315	KC9315	KD100/KD1405	KC5410	KC5410
smooth cut, pre-turned surface		KT315	KC5010	KC5010	KD1405	KC5410	KC5410

Cutting Condition		High-Temperature Alloys ▼▼▼	High-Temperature Alloys ▼▼	High-Temperature Alloys ▼	Hardened Materials ▼▼▼	Hardened Materials ▼▼	Hardened Materials ▼
heavily interrupted cut		KC5025	K68	K68	–	–	–
lightly interrupted cut		KC5010/KD120	KC5010	KC8050	KC5010/KB9610	KC5010	KC5010
varying depth of cut, casting or forging skin		KD120	KC5010	KC5010	KB9610	KC5010	KC5010
smooth cut, pre-turned surface		KB9610	KC5010	KC5010	KB9610	KB9610	KC5010

3rd Step – Select the Cutting Speed

Steel

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	1300 (400)	Starting Conditions ◁▷ sfm	m/min
P	KT315					◁▷				850	260
	KC9110					◁▷				800	240
	KC9125				◁▷					600	180
	KC8050			◁▷						550	165

Stainless Steel

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	1300 (400)	Starting Conditions ◁▷ sfm	m/min
M	KT315				◁▷					750	230
	KC5010				◁▷					600	180
	KC5025			◁▷						400	120
	KC9225				◁▷					550	170
	KC8050				◁▷					500	150

Cast Iron

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 170 (50)	330 (100)	490 (150)	655 (200)	820 (250)	980 (300)	1150 (350)	1300 (400)	Starting Conditions ◁▷ sfm	m/min
K	KT315					◁▷				900	275
	KC5010					◁▷				800	245
	KC9315					◁▷				800	245
	KC8050					◁▷				750	230

Non-Ferrous

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 800 (250)	1600 (500)	2400 (750)	3200 (1000)	4000 (1250)	4800 (1500)	5600 (1750)	6400 (2000)	Starting Conditions ◁▷ sfm	m/min
N	KD100/KD1405			◁▷						2500	765
	KC5410		◁▷							1800	550
	KC5010		◁▷							1500	460
	K68	◁▷								500	150

High-Temperature Alloys

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15)	120 (40)	180 (55)	250 (80)	330 (100)	550 (170)	655 (200)	750 (230)	Starting Conditions ◁▷ sfm	m/min
S	KB9610							◁▷		700	215
	KD120					◁▷				400	120
	KC5010				◁▷					200	60
	KC5025			◁▷						170	50
	KC8050				◁▷					230	70
	K68		◁▷							100	30

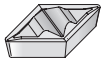
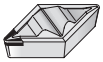
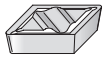
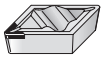
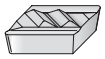
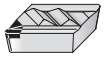
Hardened Materials

KENNA PERFECT Material Group	grade	Speed - sfm (m/min) 50 (15)	120 (40)	180 (55)	250 (80)	330 (100)	550 (170)	655 (200)	750 (230)	Starting Conditions ◁▷ sfm	m/min
H	KB9610						◁▷			500	150
	KC5010		◁▷							130	40

◁▷ Represents the recommended starting conditions. Optimize for your specific application.

TOP NOTCH Profiling Inserts

Grade Selection

	ANSI catalog number	KENNA PERFECT																								
		P				M					K						N					S						H		
		KT315	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC8050	KT315	KC5010	KC9315	KC8050	KD120	K68	KC5010	KC5410	KD1405	KD100	K68	KC5010	KC5025	KC9225	KC8050	KD120	KC5010	KB9610	KD120
DPGR   **KD100**	**DPGR431**	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
	DPGR432	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
	DPGR433	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
NPGR   **KD100**	**NPGR51R**	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
	NPGR52R	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
	NPGR51L	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
	NPGR52L	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●		●	●	●	●	●	●		●		
NPR/L   **KD100**	**NPR1305**	●	●	●	●	●	●	●	●	●	●	●		●		●	●			●	●	●	●	●	●		●		
	NPR1308	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	NPR131F	●	●	●	●	●	●	●	●	●	●	●		●		●	●			●	●	●	●	●	●		●		
	NPR132F	●	●	●	●	●	●	●	●	●	●	●		●		●	●			●	●	●	●	●	●		●		
	NPR132N	●	●	●	●	●	●	●	●	●	●	●		●		●	●				●	●	●	●	●		●		
	NPR331N	●	●	●	●	●	●	●	●	●	●	●		●		●	●				●	●	●	●	●		●		
	NPR332	●	●	●	●	●	●	●	●	●	●	●		●		●	●				●	●	●	●	●		●		
	NPR332F	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	NPR332N	●	●	●	●	●	●	●	●	●	●	●		●		●	●				●	●	●	●	●		●		
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	NPL132N	●	●	●	●	●	●	●	●	●	●	●		●		●	●				●	●	●	●	●		●		
	NPL331N	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	NPL332F	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	NPL332N	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
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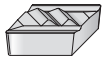
NPR/L 	**NPR13M05F**	●			●	●	●		●	●	●	●	●	●		●	●				●	●		●	●		●		
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	NPR13M05R				●					●				●											●				
	NPR13M10F				●		●			●		●	●	●		●	●				●	●			●		●		
	NPR13M10N				●		●			●		●	●	●		●	●				●	●			●		●		
	NPR13M10R				●					●				●											●				
	NPL13M05F	●			●	●	●		●	●	●	●	●	●		●	●				●	●		●	●		●		
	NPL13M05N	●			●	●	●		●	●	●	●	●	●		●	●				●	●		●	●		●		
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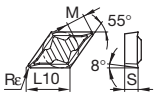
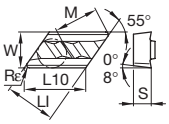
DP..



NP..

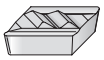
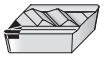
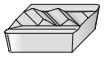
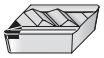
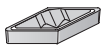
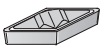
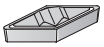
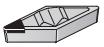
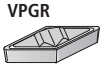
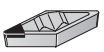


ANSI catalog number	ISO catalog number	Dimensions														
		D		W		L10		LI		S		M		Rε		
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
DPGR431	DCGR150404	1/2	12,70	-	-	.610	15,50	-	-	3/16	4,76	.273	6,94	1/64	0,40	DPGR
DPGR432	DCGR150408	1/2	12,70	-	-	.610	15,50	-	-	3/16	4,76	.255	6,48	1/32	0,80	
DPGR433	DCGR150412	1/2	12,70	-	-	.610	15,50	-	-	3/16	4,76	.237	6,01	3/64	1,20	
																KD100
NPGR51R	KCGR110304R08	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.358	9,10	1/64	0,40	NPGR
NPGR52R	KCGR110308R08	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.341	8,66	1/32	0,80	
NPGR51L	KCGR110304L08	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.358	9,10	1/64	0,40	
NPGR52L	KCGR110308L08	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.341	8,66	1/32	0,80	
																KD100
NPR1305	KNGX150401R15	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.542	13,76	.005	0,13	NPR/L
NPR1308	KNGX150402R15	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.538	13,67	.008	0,20	
NPR131F	KNGX150404R20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.529	13,44	1/64	0,40	
NPR132F	KNGX150408R20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.511	12,98	1/32	0,80	
NPR132N	KNGX150408R25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.511	12,98	1/32	0,80	
NPR331N	KNGX220404R25	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.784	19,91	1/64	0,40	
NPR332	KNGX220408R32	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	
NPR332F	KNGX220408R20	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	
NPR332N	KNGX220408R25	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	KD100
NPL1305	KNGX150401L15	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.542	13,76	.005	0,13	
NPL1308	KNGX150402L15	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.538	13,67	.008	0,20	
NPL131F	KNGX150404L20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.529	13,44	1/64	0,40	
NPL132F	KNGX150408L20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.511	12,98	1/32	0,80	
NPL132N	KNGX150408L25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.511	12,98	1/32	0,80	
NPL331N	KNGX220404L25	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.784	19,91	1/64	0,40	
NPL332F	KNGX220408L20	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	
NPL332N	KNGX220408L25	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	
NPL332	KNGX220408L32	-	-	.375	9,53	.895	22,73	.733	18,62	3/16	4,76	.767	19,47	1/32	0,80	
NPR13M05F	KNUX150405R20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	NPR/L
NPR13M05N	KNUX150405R25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	
NPR13M05R	KNUX150405R32	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	
NPR13M10F	KNUX150410R20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	
NPR13M10N	KNUX150410R25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	
NPR13M10R	KNUX150410R32	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	
NPL13M05F	KNUX150405L20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	
NPL13M05N	KNUX150405L25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	
NPL13M05R	KNUX150405L32	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.525	13,32	.020	0,50	
NPL13M10F	KNUX150410L20	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	
NPL13M10N	KNUX150410L25	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	
NPL13M10R	KNUX150410L32	-	-	.375	9,53	.608	15,44	.500	12,70	3/16	4,76	.502	12,74	.039	1,00	

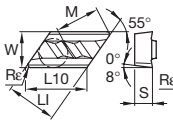
Order example:
ANSI catalog number: DPGR431
Insert grade: KT315

TOP NOTCH Profiling Inserts

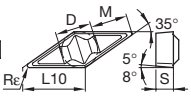
Grade Selection

	ANSI catalog number	KENNA PERFECT																									
		P				M					K						N					S						H		
		KT315	KC9110	KC9125	KC8050	KT315	KC5010	KC5025	KC9225	KC8050	KT315	KC5010	KC9315	KC8050	KD120	K68	KC5010	KC5410	KD1405	KD100	K68	KC5010	KC5025	KC9225	KC8050	KD120	KC5010	KB9610	KD120
NPR/L	NPR505	●	●	●	●	●	●	●	●	●	●	●		●		●	●			●	●	●	●	●	●		●	●	
	NPR508	●	●	●	●	●	●	●	●	●	●	●		●			●		●	●		●	●	●	●		●	●	
	NPR51	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●
	NPR52	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●				●	●	●	●	●		●		
	NPL505	●	●	●	●	●	●	●	●	●	●	●		●		●	●			●	●	●	●	●	●		●	●	
	NPL508	●	●	●	●	●	●	●	●	●	●	●		●			●		●	●		●	●	●	●		●		
	NPL51	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●
KD100 KD120 KD1405 KB9610	NPL52	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●			●	●	●	●	●	●		●		
NPR/L	NPR5M02	●			●	●	●		●	●	●	●		●		●	●				●	●		●	●		●		
	NPR5M05	●			●	●	●		●	●	●	●	●	●		●	●				●	●		●	●		●		
	NPR5M10				●					●				●											●				
	NPL5M02	●			●	●	●		●	●	●	●		●		●	●				●	●		●	●		●		
	NPL5M05	●			●	●	●		●	●	●	●	●	●		●	●				●	●		●	●		●		
	NPL5M10				●					●				●											●				
NPGN	NPGN51RE																	●											
	NPGN52RE																	●											
	NPGN51LE																	●											
	NPGN52LE																	●											
VBMR	VBMR2205	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	VBMR221	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
	VBMR222	●	●	●	●	●	●	●	●	●	●	●		●			●					●	●	●	●		●		
VCMR	VCMR331	●			●	●	●	●	●	●	●	●	●	●			●					●	●	●	●		●		
	VCMR332	●			●	●	●	●	●	●	●	●	●	●			●					●	●	●	●		●		
VPGN	VPGN331													●	●			●							●	●		●	●
	VPGN332													●	●			●							●	●		●	●
	VPGN333																			●									
 KD100 KD120																													
VPGR	VPGR3305	●	●	●	●	●	●	●	●	●	●	●		●		●	●	●			●	●	●	●	●		●		
	VPGR331	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●			●	●	●	●	●		●		
	VPGR332	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●		●	●	●	●	●	●		●		
	VPGR333	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●		●	●	●	●	●	●		●		
	VPGR334	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●				●	●	●	●		●		
KD100																													

NP..



V..

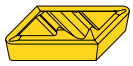
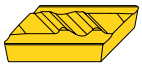
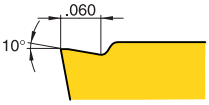
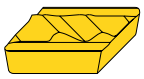
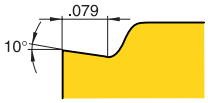
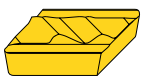
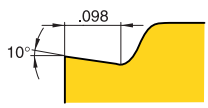
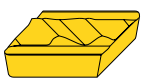
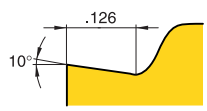


ANSI catalog number	ISO catalog number	Dimensions														
		D		W		L10		LI		S		M		Rε		
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	
NPR505	KCGX110301R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.369	9,38	.005	0,13	NPR/L
NPR508	KCGX110302R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.369	9,36	.008	0,20	
NPR51	KCGX110304R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.360	9,13	1/64	0,40	
NPR52	KCGX110308R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.340	8,64	1/32	0,80	
NPL505	KCGX110301L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.369	9,38	.005	0,13	
NPL508	KCGX110302L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.369	9,36	.008	0,20	
NPL51	KCGX110304L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.360	9,13	1/64	0,40	
NPL52	KCGX110308L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.340	8,64	1/32	0,80	KD100 KD120 KD1405 KB9610
NPR5M02	KCUX110302R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.367	9,32	.008	0,20	NPR/L
NPR5M05	KCUX110305R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.353	8,97	.020	0,50	
NPR5M10	KCUX110310R15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.330	8,39	.039	1,00	
NPL5M02	KCUX110302L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.367	9,32	.008	0,20	
NPL5M05	KCUX110305L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.353	8,97	.020	0,50	
NPL5M10	KCUX110310L15	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.330	8,39	.039	1,00	
NPGN51RE	KCGN110304R08E	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.358	9,10	1/64	0,40	NPGN
NPGN52RE	KCGN110308R08E	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.341	8,66	1/32	0,80	
NPGN51LE	KCGN110304L08E	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.358	9,10	1/64	0,40	
NPGN52LE	KCGN110308L08E	-	-	.250	6,35	.457	11,60	.375	9,53	1/8	3,18	.341	8,66	1/32	0,80	
VBMR2205	VBMR110302	1/4	6,35	-	-	.436	11,07	-	-	1/8	3,18	.272	6,91	.008	0,20	VBMR
VBMR221	VBMR110304	1/4	6,35	-	-	.436	11,07	-	-	1/8	3,18	.254	6,46	1/64	0,40	
VBMR222	VBMR110308	1/4	6,35	-	-	.436	11,07	-	-	1/8	3,18	.218	5,54	1/32	0,80	
VCMR331	VCMR160404	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.400	10,15	1/64	0,40	VCMR
VCMR332	VCMR160408	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.363	9,23	1/32	0,80	
VPGN331	VCGN160404	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.400	10,15	1/64	0,40	VPGN
VPGN332	VCGN160408	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.363	9,23	1/32	0,80	
VPGN333	VCGN160412	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.327	8,31	3/64	1,20	KD100 KD120
VPGR3305	VCGR160402	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.417	10,60	.008	0,20	VPGR
VPGR331	VCGR160404	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.400	10,15	1/64	0,40	
VPGR332	VCGR160408	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.363	9,23	1/32	0,80	
VPGR333	VCGR160412	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.327	8,31	3/64	1,20	
VPGR334	VCGR160416	3/8	9,53	-	-	.654	16,61	-	-	3/16	4,76	.291	7,38	1/16	1,60	KD100

Order example:
ANSI catalog number: NPR505
Insert grade: KT315

Chip Control

Top Notch Profiling

operation	insert style application	insert geometry	profile	feed rate – inches / depth of cut – inches
finishing ▼▼▼	**DPGR** precision ground			.004 - .012 (0,1 - 0,3) / .010 - .070 (0,3 - 1,8)
finishing ▼▼▼	**NPGR** precision ground			004 - .012 (0,1 - 0,3) / .010 - .070 (0,3 - 1,8)
finishing ▼▼▼	**VBMR**			.004 - .014 (0,1 - 0,4) / .010 - .080 (0,3 - 2,0)
finishing ▼▼▼	**VPGR** precision ground			.004 - .014 (0,1 - 0,4) / .010 - .080 (0,3 - 2,0)
finishing ▼▼▼	**NP**			.006 - .016 (0,2 - 0,4) / .030 - .110 (0,8 - 2,8)
medium machining ▼▼	**NP-F**			.008 - .018 (0,2 - 0,5) / .040 - .120 (1,0 - 3,0)
medium machining ▼▼	**NP-N**			.010 - .022 (0,3 - 0,6) / .045 - .140 (1,1 - 3,6)
roughing ▼	**NP-33 NP-R**			.012 - .026 (0,3 - 0,7) / .060 - .200 (1,5 - 5,1)

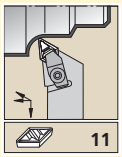
feed rate – inches: .0015 .0025 .004 .006 .010 .016 .025 .040 .060 .100 .200

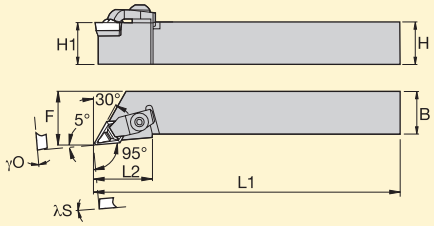
depth of cut – inches: .004 .006 .010 .016 .025 .040 .060 .100 .160 .250 .500

feed rate – (mm): 0,04 0,063 0,01 0,16 0,25 0,4 0,63 1,0 1,6 2,5 5,0

depth of cut – (mm): 0,1 0,16 0,25 0,4 0,63 1,0 1,6 2,5 4,0 6,3 10,0

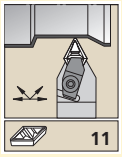
NDLP -5°

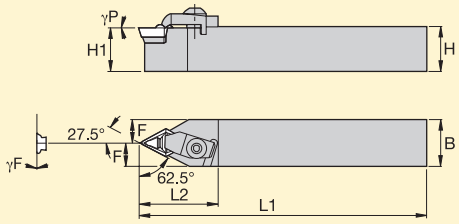




Catalog number	H = H1	B	F	L1	L2	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand															
NDLPR164C	1.000	1.000	1.250	5.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
NDLPR164D	1.000	1.000	1.250	6.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
NDLPR204D	1.250	1.250	1.500	6.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
Left hand															
NDLPL164C	1.000	1.000	1.250	5.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32
NDLPL164D	1.000	1.000	1.250	6.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32
NDLPL204D	1.250	1.250	1.500	6.00	1.38	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32

NDPP 27.5°



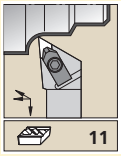


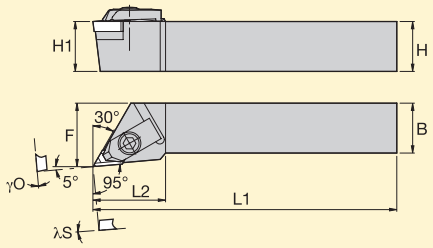
Catalog number	H = H1	B	F	L1	L2	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
NDPPN164D	1.000	1.000	.500	6.00	1.59	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
NDPPN204D	1.250	1.250	.625	6.00	1.59	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32

Order example:
Right hand: **NDLPR164C**
Left hand: **NDLPL164C**

Toolholders

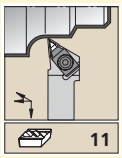
NKLC/N -5°

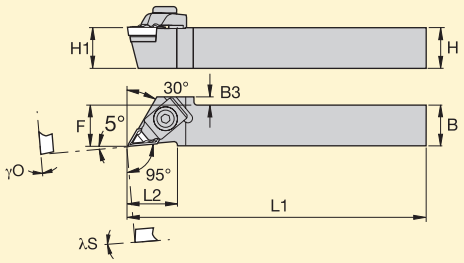




Catalog number	H = H1	B	F	L1	L2	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand															
NKLCR0805V	.500	.500	.750	3.50	.88	-	0.00	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
NKLCR1005B	.625	.625	.750	4.50	.88	-	0.00	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
NKLCR1205A	.750	.750	1.000	4.00	.88	-	0.00	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
NKLCR1205B	.750	.750	1.000	4.50	.88	-	0.00	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
NKLCR1605C	1.000	1.000	1.250	5.00	.88	-	0.00	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
NKLNR121B	.750	.750	1.000	4.50	1.25	-	-2.0	-5.0	**NPR132**	**SM272**	**SL344**	-	**CM66**	**S625**	5/32
NKLNR161C	1.000	1.000	1.250	5.00	1.25	-	-2.0	-5.0	**NPR132**	**SM272**	**SL344**	-	**CM66**	**S625**	5/32
NKLNR163C	1.000	1.000	1.250	5.00	1.44	-	-2.0	-5.0	**NPR332**	**SM268**	**SL344**	-	**CM65**	**S625**	5/32
NKLNR163D	1.000	1.000	1.250	6.00	1.44	-	-2.0	-5.0	**NPR332**	**SM268**	**SL344**	-	**CM65**	**S625**	5/32
NKLNR863E	1.500	1.000	1.250	7.00	1.44	-	-2.0	-5.0	**NPR332**	**SM268**	**SL344**	-	**CM65**	**S625**	5/32
Left hand															
NKLCL0805V	.500	.500	.750	3.50	.88	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM71**	**S524**	1/8
NKLCL1005B	.625	.625	.750	4.50	.88	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM71**	**S524**	1/8
NKLCL1205A	.750	.750	1.000	4.00	.88	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
NKLCL1205B	.750	.750	1.000	4.50	.88	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
NKLCL1605C	1.000	1.000	1.250	5.00	.88	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
NKLNL121B	.750	.750	1.000	4.50	1.25	-	-2.0	-5.0	**NPL132**	**SM271**	**SL344**	-	**CM66**	**S625**	5/32
NKLNL161C	1.000	1.000	1.250	5.00	1.25	-	-2.0	-5.0	**NPL132**	**SM271**	**SL344**	-	**CM66**	**S625**	5/32
NKLNL163C	1.000	1.000	1.250	5.00	1.44	-	-2.0	-5.0	**NPL332**	**SM267**	**SL344**	-	**CM65**	**S625**	5/32
NKLNL163D	1.000	1.000	1.250	6.00	1.44	-	-2.0	-5.0	**NPL332**	**SM267**	**SL344**	-	**CM65**	**S625**	5/32
NKLNL863E	1.500	1.000	1.250	7.00	1.44	-	-2.0	-5.0	**NPL332**	**SM267**	**SL344**	-	**CM65**	**S625**	5/32

NKLC-F -5°



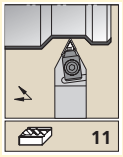


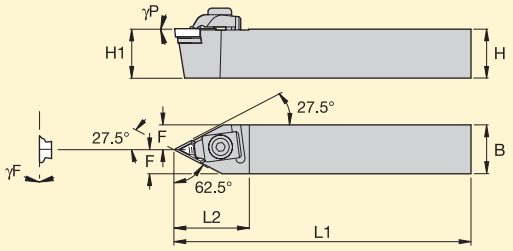
Catalog number	H = H1	B	F	L1	L2	B3	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand															
NKLCRF0805D	.500	.500	.500	6.00	.75	.15	0.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM180**	**S524**	1/8
NKLCRF1005B	.625	.625	.625	4.50	.75	-	0.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM180**	**S524**	1/8
Left hand															
NKLCLF0805D	.500	.500	.500	6.00	.75	.15	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM181**	**S524**	1/8
NKLCLF1005B	.625	.625	.625	4.50	.75	-	0.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM181**	**S524**	1/8

Order example:
Right hand: **NKLCR0805V**

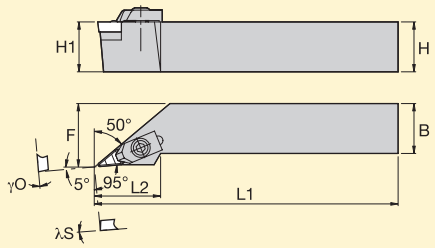
Left hand: **NKLCL0805V**

NKPC 27.5°



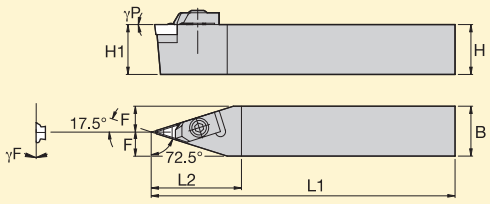


NVLC -5°



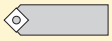
Catalog number	H = H1	B	F	L1	L2	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
NKPCN0805V	.500	.500	.250	3.50	1.13	-	0.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
NKPCN0805D	.500	.500	.250	6.00	1.13	-	0.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
NKPCN1205B	.750	.750	.375	4.50	1.13	-	0.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
							λS°	γO°							
Right hand															
NVLCR123B	.750	.750	1.000	4.50	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
NVLCR163D	1.000	1.000	1.250	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
NVLCR203D	1.250	1.250	1.500	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
NVLCR243D	1.500	1.500	2.000	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
Left hand															
NVLCL123B	.750	.750	1.000	4.50	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
NVLCL163D	1.000	1.000	1.250	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
NVLCL203D	1.250	1.250	1.500	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
NVLCL243D	1.500	1.500	2.000	6.00	1.44	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32

NVVC 17.5°



Catalog number	H = H1	B	F	L1	L2	B3	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
NVVCN163D	1.000	1.000	.497	6.00	1.62	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
NVVCN203D	1.250	1.250	.622	6.00	1.62	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
NVVCN243D	1.500	1.500	.747	6.00	1.62	-	0.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32

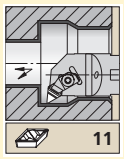
Order example:
NKPCN0805V

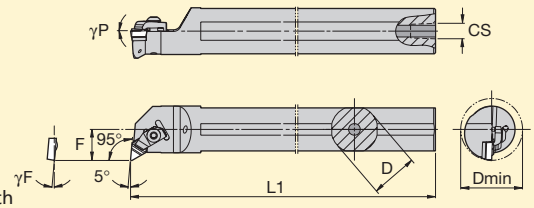


TOP NOTCH PROFILING

Boring Bars

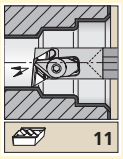
A-NDLP -5°

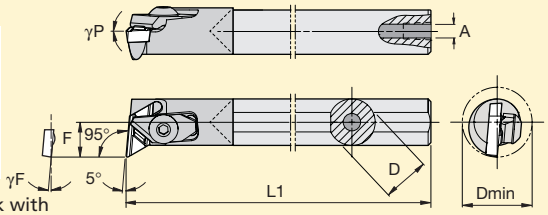




Steel shank with through coolant

E-NEL -5°

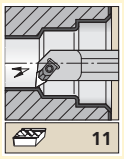


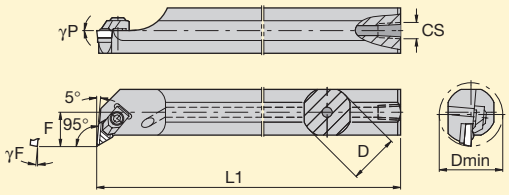


Carbide shank with through coolant

Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A20NDLPR4	1.250	1.585	.875	14.00	-	-	-	1/4-18 NPT	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
A24NDLPR4	1.500	1.835	1.000	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
A32NDLPR4	2.000	2.400	1.250	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
Left hand																	
A20NDLPL4	1.250	1.585	.875	14.00	-	-	-	1/4-18 NPT	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
A24NDLPL4	1.500	1.835	1.000	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
A32NDLPL4	2.000	2.400	1.250	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
									γF°	**γP°**							
Right hand																	
E08NELR05	.500	.750	.375	8.15	-	-	.187	-	-5.0	0.0	**NPL51**	-	-	-	**CM106**	**S518**	3/32
Left hand																	
E08NELL05	.500	.750	.375	8.15	-	-	.187	-	-5.0	0.0	**NPR51**	-	-	-	**CM105**	**S518**	3/32

A-NKLC -5°



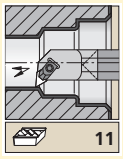


Steel shank with through coolant

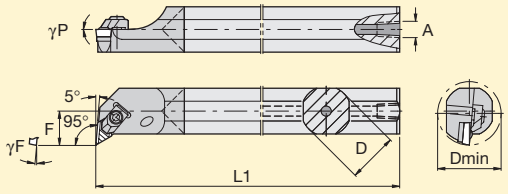
Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A10NKLCR05	.625	.900	.500	10.00	-	-	-	1/8-27 NPT	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM79**	**S524**	1/8
A12NKLCR05	.750	.980	.562	10.00	-	-	-	1/8-27 NPT	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A16NKLCR05	1.000	1.300	.750	12.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A20NKLCR05	1.250	1.580	.875	14.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A24NKLCR05	1.500	1.870	1.000	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A28NKLCR05	1.750	2.120	1.125	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A32NKLCR05	2.000	2.370	1.250	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
Left hand																	
A10NKLCL05	.625	.900	.500	10.00	-	-	-	1/8-27 NPT	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM71**	**S524**	1/8
A12NKLCL05	.750	.980	.562	10.00	-	-	-	1/8-27 NPT	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A16NKLCL05	1.000	1.300	.750	12.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A20NKLCL05	1.250	1.580	.875	14.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A24NKLCL05	1.500	1.870	1.000	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A28NKLCL05	1.750	2.120	1.125	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A32NKLCL05	2.000	2.370	1.250	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8

Order example:
Right hand: **A20NDLPR4**
Left hand: **A20NDLPL4**

E-NKLC -5°

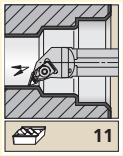


Carbide shank with through coolant

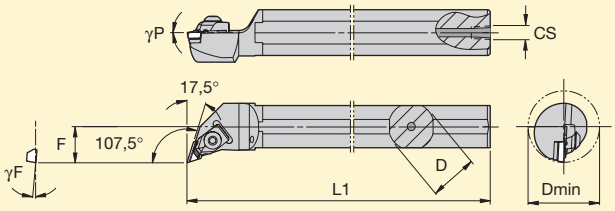


Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
E08NKLCR05	.500	.660	.375	8.00	-	-	.187	-	-5.0	0.0	**NP..51L**	**-**	**-**	-	**CM106**	**S518**	3/32
E10NKLCR05	.625	.900	.500	10.00	-	-	.218	-	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM79**	**S524**	1/8
E12NKLCR05	.750	.980	.562	10.00	-	-	.281	-	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
Left hand																	
E08NKLCL05	.500	.660	.375	8.00	-	-	.187	-	-5.0	0.0	**NP..51R**	**-**	**-**	-	**CM105**	**S518**	3/32
E10NKLCL05	.625	.900	.500	10.00	-	-	.218	-	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM71**	**S524**	1/8
E12NKLCL05	.750	.980	.562	10.00	-	-	.281	-	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8

A-NKQC -17.5°



Steel shank with through coolant



Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A08NKQCR05	.500	.670	.375	8.00	-	-	-	1/16-27 NPT	-6.0	0.0	**NP..51L**	**-**	**-**	-	**CM112**	**S518**	3/32
A12NKQCR05	.750	.980	.562	10.00	-	-	-	1/8-27 NPT	-6.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
A16NKQCR05	1.000	1.300	.750	12.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM68**	**S524**	1/8
Left hand																	
A08NKQCL05	.500	.670	.375	8.00	-	-	-	1/16-27 NPT	-6.0	0.0	**NP..51R**	**-**	**-**	-	**CM111**	**S518**	3/32
A12NKQCL05	.750	.980	.562	10.00	-	-	-	1/8-27 NPT	-6.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8
A16NKQCL05	1.000	1.300	.750	12.00	-	-	-	1/4-18 NPT	-3.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM68**	**S524**	1/8

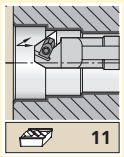
Order example:
Right hand: **E08NKLCR05**

Left hand: **E08NKLCL05**

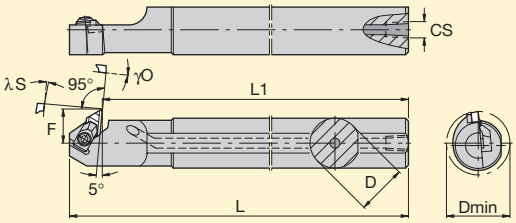
TOP NOTCH PROFILING

Boring Bars

A-NKXC -5°

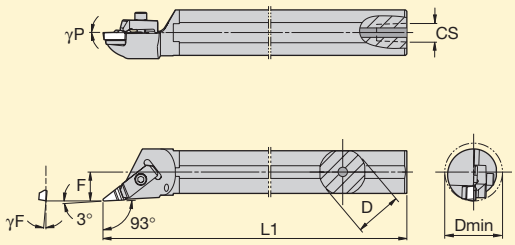


Steel shank with through coolant



A-NVJC -3°

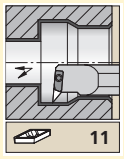
Steel shank with through coolant



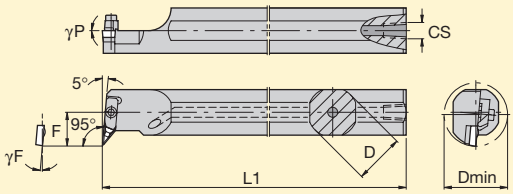
Catalog number	D	Dmin	F	L1	L	CD	A	CS	λS°	γO°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A12NKXCR05	.750	1.060	.625	10.00	10.69	-	-	1/8-27 NPT	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
A16NKXCR05	1.000	1.300	.750	12.00	12.69	-	-	1/4-18 NPT	-5.0	0.0	**NP..51R**	**SM285**	**S959**	-	**CM79**	**S524**	1/8
Left hand																	
A12NKXCL05	.750	1.060	.625	10.00	10.69	-	-	1/8-27 NPT	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM71**	**S524**	1/8
A16NKXCL05	1.000	1.300	.750	12.00	12.69	-	-	1/4-18 NPT	-5.0	0.0	**NP..51L**	**SM286**	**S959**	-	**CM71**	**S524**	1/8

Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A20NVJCR3	1.250	1.774	.765	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32

A-NVLC -5°



Steel shank with through coolant



Catalog number	D	Dmin	F	L1	L	CD	A	CS	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand																	
A20NVLCR3	1.250	1.830	1.125	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
A24NVLCR3	1.500	2.120	1.250	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
A32NVLCR3	2.000	2.620	1.500	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
Left hand																	
A20NVLCL3	1.250	1.830	1.125	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
A24NVLCL3	1.500	2.120	1.250	14.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
A32NVLCL3	2.000	2.620	1.500	16.00	-	-	-	1/4-18 NPT	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32

Order example:
Right hand: **A12NKXCR05**
Left hand: **A12NKXCL05**

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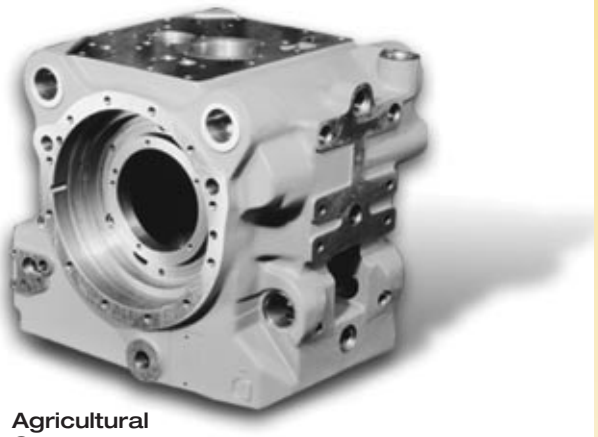

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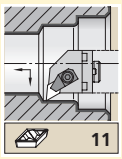
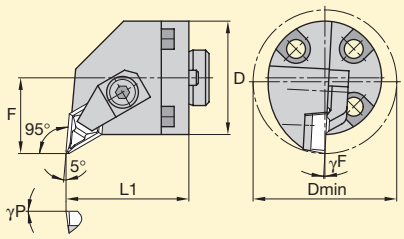
Boring Heads

H-NDLP -5°

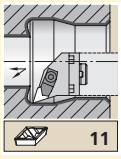


With through coolant

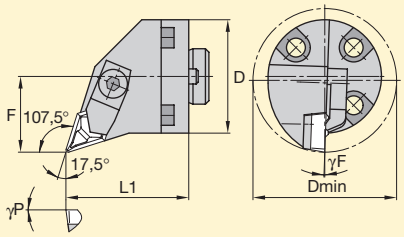


Catalog number	D	Dmin	F	L1	L	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
H20NDLPR4W	1.250	1.580	.875	1.625	-	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H24NDLPR4W	1.500	1.870	1.000	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H28NDLPR4W	1.750	2.125	1.125	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H32NDLPR4W	2.000	2.370	1.250	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H40NDLPR4W	2.500	3.125	1.625	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
Left hand														
H20NDLPL4W	1.250	1.580	.875	1.625	-	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H24NDLPL4W	1.500	1.870	1.000	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H28NDLPL4W	1.750	2.125	1.125	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H32NDLPL4W	2.000	2.370	1.250	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H40NDLPL4W	2.500	3.125	1.625	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32

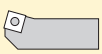
H-NDQP -17.5°



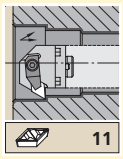
With through coolant



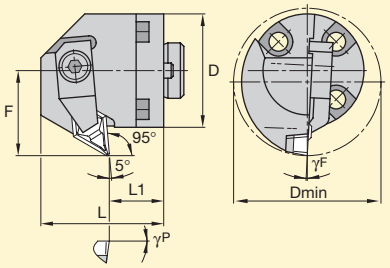
Catalog number	D	Dmin	F	L1	L	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
H20NDQPR4W	1.250	1.585	.875	1.625	-	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S530**	5/32
H24NDQPR4W	1.500	1.835	1.000	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32
H32NDQPR4W	2.000	2.500	1.375	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32
H40NDQPR4W	2.500	3.125	1.625	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM117**	**S532**	5/32
Left hand														
H20NDQPL4W	1.250	1.585	.875	1.625	-	-3.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S530**	5/32
H24NDQPL4W	1.500	1.835	1.000	1.625	-	-2.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
H32NDQPL4W	2.000	2.500	1.375	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32
H40NDQPL4W	2.500	3.125	1.625	1.625	-	0.0	0.0	**DP.432**	**SM414**	**S111**	1/16	**CM116**	**S532**	5/32

Order example:
Right hand: **H20NDLPR4W**
Left hand: **H20NDLPL4W** 

H-NDXP -5°

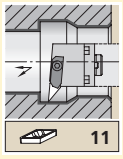


With through coolant

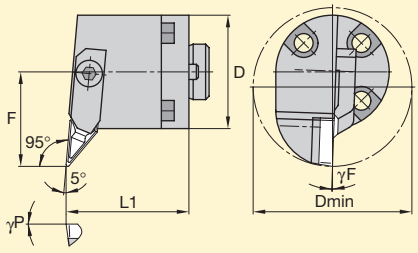


Catalog number	D	Dmin	F	L1	L	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
H20NDXPR4W	1.250	1.705	1.000	.750	1.62	-3.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H24NDXPR4W	1.500	2.000	1.125	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H32NDXPR4W	2.000	2.500	1.375	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H40NDXPR4W	2.500	3.125	1.625	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
Left hand														
H20NDXPL4W	1.250	1.705	1.000	.750	1.62	-3.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H24NDXPL4W	1.500	2.000	1.125	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H32NDXPL4W	2.000	2.500	1.375	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32
H40NDXPL4W	2.500	3.125	1.625	.750	1.62	0.0	0.0	**DP..432**	**SM414**	**S111**	1/16	**CM119**	**S532**	5/32

H-NVLP -5°



With through coolant



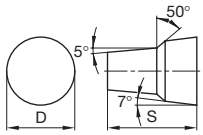
Catalog number	D	Dmin	F	L1	L	γF°	γP°	Gage Insert	Shim	Shim Screw	Hex (inch)	Clamp	Clamp Screw	Hex (inch)
Right hand														
H20NVLPR3W	1.250	1.830	1.125	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
H24NVLPR3W	1.500	2.120	1.250	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
H32NVLPR3W	2.000	2.620	1.500	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
H40NVLPR3W	2.500	3.500	2.000	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM113**	**S412**	5/32
Left hand														
H20NVLPL3W	1.250	1.830	1.125	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
H24NVLPL3W	1.500	2.120	1.250	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
H32NVLPL3W	2.000	2.620	1.500	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32
H40NVLPL3W	2.500	3.500	2.000	1.625	-	-2.0	0.0	**VP..332**	**SM412**	**S959**	-	**CM114**	**S412**	5/32

Order example:
Right hand: **H20NDXPR4W**

Left hand: **H20NDXPL4W**

	ANSI catalog number	KENNA PERFECT														
		P			M				K			N		S				
		KT315	KC5010	KC8050	KT315	KC5010	KC5025	KC9225	KT315	KC5010	KC8050	K313	KC5410	K313	KC5010	KC5025	KC9225
RCGK-FS	RCGK152FS		●			●	●	●		●		●		●	●	●	●
	RCGK23FS		●			●	●	●		●		●		●	●	●	●
	RCGK35FS		●			●	●	●		●		●		●	●	●	●
	RCGK46FS		●			●	●	●		●		●		●	●	●	●
RCGK-HP	RCGK152HP	●	●	●	●	●			●	●	●	●	●	●	●		
	RCGK23HP	●	●	●	●	●			●	●	●	●	●	●	●		
	RCGK35HP	●	●	●	●	●			●	●	●	●	●	●	●		
	RCGK46HP	●	●	●	●	●			●	●	●	●	●	●	●		
RCMK	RCMK152	●	●	●	●	●			●	●	●	●		●	●		
	RCMK23	●	●	●	●	●			●	●	●	●		●	●		
	RCMK35	●	●	●	●	●			●	●	●	●		●	●		
	RCMK46	●	●	●	●	●			●	●	●	●		●	●		

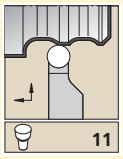
RC...

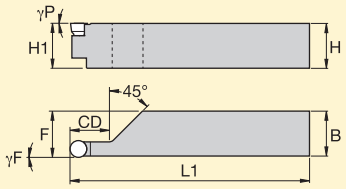


ANSI catalog number	ISO catalog number	Dimensions D inch	D mm	S inch	S mm	
RCGK152FS	RCGK040300FS	3/16	4,76	.251	6,38	RCGK-FS
RCGK23FS	RCGK060400FS	1/4	6,35	.358	9,09	
RCGK35FS	RCGK090700FS	3/8	9,53	.521	13,23	
RCGK46FS	RCGK120800FS	1/2	12,70	.654	16,61	
RCGK152HP	RCGK040300HP	3/16	4,76	.251	6,38	RCGK-HP
RCGK23HP	RCGK060400HP	1/4	6,35	.358	9,09	
RCGK35HP	RCGK090700HP	3/8	9,53	.521	13,23	
RCGK46HP	RCGK120800HP	1/2	12,70	.654	16,61	
RCMK152	RCMK040300	3/16	4,76	.251	6,38	RCMK
RCMK23	RCMK060400	1/4	6,35	.358	9,09	
RCMK35	RCMK090700	3/8	9,53	.521	13,23	
RCMK46	RCMK120800	1/2	12,70	.654	16,61	

Order example:
ANSI catalog number: RCGK152FS
Insert grade: KC5010

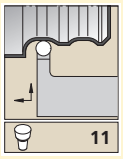
TRAO

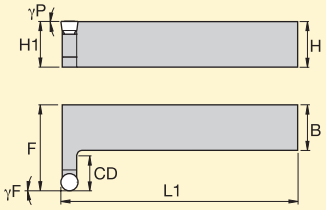




Catalog number Right hand/Left hand	H = H1	B	F	L1	CD	γF°	γP°	Gage Insert
TRAO R/L 1615D	1.00	1.00	1.003	6.00	.50	0.0	0.0	**RC..152**
TRAO R/L 2015D	1.25	1.25	1.253	6.00	.50	0.0	0.0	**RC..152**
TRAO R/L 2415E	1.50	1.50	1.503	7.00	.50	0.0	0.0	**RC..152**
TRAO R/L 162D	1.00	1.00	1.016	6.00	.75	0.0	0.0	**RC..23**
TRAO R/L 202D	1.25	1.25	1.266	6.00	.75	0.0	0.0	**RC..23**
TRAO R/L 242E	1.50	1.50	1.516	7.00	.75	0.0	0.0	**RC..23**
TRAO R/L 163D	1.00	1.00	1.020	6.00	.75	0.0	0.0	**RC..35**
TRAO R/L 203D	1.25	1.25	1.270	6.00	.75	0.0	0.0	**RC..35**
TRAO R/L 243E	1.50	1.50	1.520	7.00	.75	0.0	0.0	**RC..35**
TRAO R/L 164D	1.00	1.00	1.032	6.00	1.00	0.0	0.0	**RC..46**
TRAO R/L 204D	1.25	1.25	1.282	6.00	1.00	0.0	0.0	**RC..46**
TRAO R/L 244E	1.50	1.50	1.532	7.00	1.00	0.0	0.0	**RC..46**

TRHO





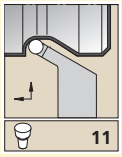
Catalog number	H = H1	B	F	L1	CD	γF°	γP°	Gage Insert
Right hand								
TRHOR1615D	1.00	1.00	1.625	6.00	.50	0.0	0.0	**RC..152**
TRHOR2015D	1.25	1.25	1.875	6.00	.50	0.0	0.0	**RC..152**
TRHOR162D	1.00	1.00	1.875	6.00	.75	0.0	0.0	**RC..23**
TRHOR202D	1.25	1.25	2.125	6.00	.75	0.0	0.0	**RC..23**
TRHOR242E	1.50	1.50	2.375	7.00	.75	0.0	0.0	**RC..23**
TRHOR163D	1.00	1.00	1.875	6.00	.75	0.0	0.0	**RC..35**
TRHOR203D	1.25	1.25	2.125	6.00	.75	0.0	0.0	**RC..35**
TRHOR243E	1.50	1.50	2.375	7.00	.75	0.0	0.0	**RC..35**
TRHOR164D	1.00	1.00	1.875	6.00	.75	0.0	0.0	**RC..46**
TRHOR204D	1.25	1.25	2.125	6.00	.75	0.0	0.0	**RC..46**
TRHOR244E	1.50	1.50	2.375	7.00	.75	0.0	0.0	**RC..46**

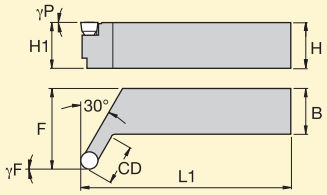
NOTE: Left hand holders are available as specials

Order example:
Right hand: **TRAOR1615D**

Left hand: **TRAOL1615D**

TRTO





Catalog number	H = H1	B	F	L1	CD	γF°	γP°	Gage Insert
Right hand								
TRTOR1615D	1.00	1.00	1.500	6.00	.55	0.0	0.0	**RC..152**
TRTOR2015D	1.25	1.25	1.750	6.00	.55	0.0	0.0	**RC..152**
TRTOR162D	1.00	1.00	1.750	6.00	.84	0.0	0.0	**RC..23**
TRTOR202D	1.25	1.25	2.000	6.00	.84	0.0	0.0	**RC..23**
TRTOR242E	1.50	1.50	2.250	7.00	.84	0.0	0.0	**RC..23**
TRTOR163D	1.00	1.00	1.750	6.00	.87	0.0	0.0	**RC..35**
TRTOR203D	1.25	1.25	2.000	6.00	.87	0.0	0.0	**RC..35**
TRTOR243E	1.50	1.50	2.250	7.00	.87	0.0	0.0	**RC..35**
TRTOR164D	1.00	1.00	1.750	6.00	.89	0.0	0.0	**RC..46**
TRTOR204D	1.25	1.25	2.000	6.00	.89	0.0	0.0	**RC..46**
TRTOR244E	1.50	1.50	2.250	7.00	.89	0.0	0.0	**RC..46**

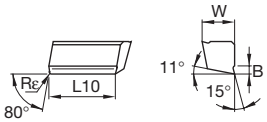
NOTE: Left hand holders are available as specials

Order example:
Right hand: **TRTOR1615D**

Grade Selection

	ANSI catalog number	K68	KC720
BPGF	**Right hand**		
	BPGF030201R	●	●
	BPGF030202R	●	●
	BPGF050301R	●	●
	BPGF050302R	●	●
	BPGF050304R	●	●
	BPGF080402R	●	●
	BPGF080404R		●
	Left hand		
	BPGF030201L	●	●
	BPGF030202L	●	●
	BPGF050301L	●	●
	BPGF050302L	●	●
	BPGF050304L	●	●
	BPGF080402L	●	●
	BPGF080404L	●	●

BPGF..



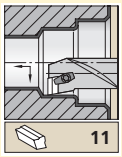
ANSI catalog number	ISO catalog number	Dimensions L10 inch	L10 mm	W inch	W mm	Rε inch	Rε mm	B inch	B mm
Right hand									
BPGF030201R	**BPGF030201R14**	.118	3,00	.079	2,00	.002	0,05	.055	1,40
BPGF030202R	**BPGF030202R14**	.118	3,00	.079	2,00	.008	0,20	.055	1,40
BPGF050301R	**BPGF050301R12**	.177	4,50	.098	2,50	.002	0,05	.047	1,12
BPGF050302R	**BPGF050302R12**	.177	4,50	.098	2,50	.008	0,20	.047	1,12
BPGF050304R	**BPGF050304R16**	.177	4,50	.098	2,50	.016	0,40	.063	1,60
BPGF080402R	**BPGF080402R18**	.315	8,00	.157	4,00	.008	0,20	.071	1,80
BPGF080404R	**BPGF080404R22**	.315	8,00	.157	4,00	.016	0,40	.087	2,20
Left hand									
BPGF030201L	**BPGF030201L14**	.118	3,00	.079	2,00	.002	0,05	.055	1,40
BPGF030202L	**BPGF030202L14**	.118	3,00	.079	2,00	.008	0,20	.055	1,40
BPGF050301L	**BPGF050301L12**	.177	4,50	.098	2,50	.002	0,05	.047	1,12
BPGF050302L	**BPGF050302L12**	.177	4,50	.098	2,50	.008	0,20	.047	1,12
BPGF050304L	**BPGF050304L16**	.177	4,50	.098	2,50	.016	0,40	.063	1,60
BPGF080402L	**BPGF080402L18**	.315	8,00	.157	4,00	.008	0,20	.071	1,80
BPGF080404L	**BPGF080404L22**	.315	8,00	.157	4,00	.016	0,40	.087	2,20

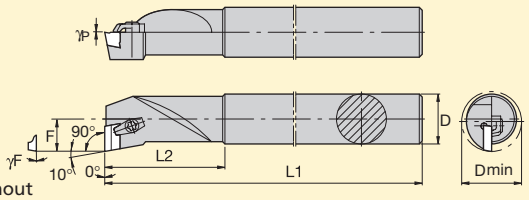
BPGF

Order example:
ANSI catalog number: BPGF030201R
Insert grade: K68

Boring Bars

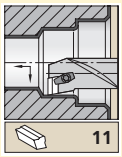
S-KBFP 0°

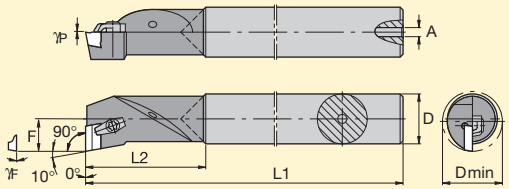




Steel shank without through coolant

E-KBFP 0°

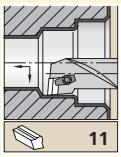


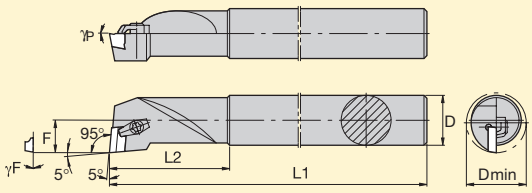


Carbide shank with through coolant

Catalog number	D	Dmin	F	L1	L2	A	γF°	γP°	Gage Insert	Clamp Assembly	Torx
Right hand											
S04KBFPR03	.250	.250	.128	2.375	.625	-	0.0	0.0	**BP..030202L**	**CE1031**	T6
S04KBFPR05	.250	.315	.177	2.375	.625	-	0.0	0.0	**BP..050302L**	**CE1014**	T8
S05KBFPR05	.313	.394	.216	3.125	.750	-	0.0	0.0	**BP..050302L**	**CE1014**	T8
							γF°	γP°			
Right hand											
E04KBFPR03	.250	.250	.128	3.938	1.220	0.06	0.0	0.0	**BP..030202L**	**CE1031**	T6
E04KBFPR05	.250	.315	.177	3.938	0.630	0.06	0.0	0.0	**BP..050302L**	**CE1014**	T8
E05KBFPR05	.313	.394	.216	4.922	0.787	0.08	0.0	0.0	**BP..050302L**	**CE1014**	T8

S-KBLP -5°



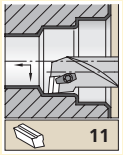


Steel shank without through coolant

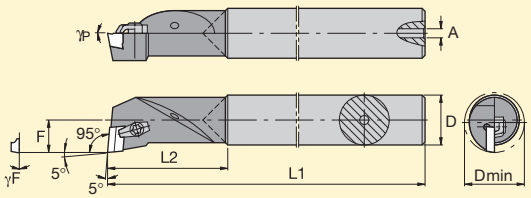
Catalog number	D	Dmin	F	L1	L2	A	γF°	γP°	Gage Insert	Clamp Assembly	Torx
Right hand											
S04KBLPR03	.250	.250	.128	2.375	.625	-	0.0	0.0	**BP..030202L**	**CE1031**	T6
S04KBLPR05	.250	.315	.177	2.375	.625	-	0.0	0.0	**BP..050302L**	**CE1014**	T8
S05KBLPR05	.313	.394	.216	3.125	.750	-	0.0	0.0	**BP..050302L**	**CE1014**	T8
Left hand											
S04KBLPL03	.250	.250	.128	2.375	.625	-	0.0	0.0	**BP..030202R**	**CE1031**	T6
S04KBLPL05	.250	.315	.177	2.375	.625	-	0.0	0.0	**BP..050302R**	**CE1014**	T8
S05KBLPL05	.313	.394	.216	3.125	.750	-	0.0	0.0	**BP..050302R**	**CE1014**	T8

Order example:
Right hand: **S04KBFPR03**

E-KBLP -5°



Carbide shank with
through coolant



Catalog number Right hand	D	Dmin	F	L1	L2	A	γF°	γP°	Gage Insert	Clamp Assembly	Torx
Right hand											
E04KBLPR03	.250	.250	.128	3.938	1.220	0.06	0.0	00	**BP..030202L**	**CE1031**	T6
E04KBLPR05	.250	.315	.177	3.938	0.630	0.06	0.0	00	**BP..050302L**	**CE1014**	T8
E05KBLPR05	.313	.394	.216	4.922	0.787	0.08	0.0	00	**BP..050302L**	**CE1014**	T8
Left hand											
E04KBLPL03	.250	.250	.128	3.938	1.220	0.06	0.0	00	**BP..030202R**	**CE1031**	T6
E04KBLPL05	.250	.315	.177	3.938	0.630	0.06	0.0	00	**BP..050302R**	**CE1014**	T8
E05KBLPL05	.313	.394	.216	4.922	0.787	0.08	0.0	00	**BP..050302R**	**CE1014**	T8

Order example:
Right hand: **E04KBLPR03**

Left hand: **E04KBLPL03**

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Kennametal Classic Products – the original performance-proven tooling!

Classic Products and Appendix

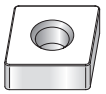
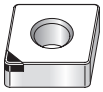
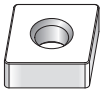
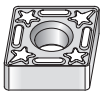
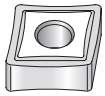
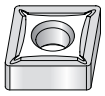
Kennametal Classic Products **E2**

KENLOC Inserts	E2
KENDEX Inserts	E18
SCREW-ON Inserts	E22
Application-Specific Inserts	E31
TOP NOTCH Profiling	E31
K-LOCK	E32
Grooving / Cut-Off Inserts	E33
KENDEX Deep Grooving	E39
Separator	E40
Threading Inserts	E41
LT	E41
TOP NOTCH	E43

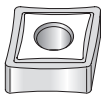
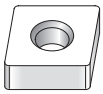
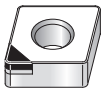
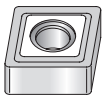
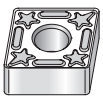
Appendix **E48**

Wrenches	E48
Torque Recommendation	E50
Material Comparison Table	E54

Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
CNGA  KD050 KD081	CNGA432	CNGA120408																	●		
	CNGA432S0420	CNGA120408S01020																		●	●
CNGA-SM 	CNGA431S0420M	CNGA120404S01020M																		●	
	CNGA432S0420M	CNGA120408S01020M																		●	●
	CNGA433S0420M	CNGA120412S01020M																		●	
CNGA-T 	CNGA432T0820	CNGA120408T02020															●	●			
	CNGA433T0820	CNGA120412T02020																●			
	CNGA434T0820	CNGA120416T02020																●			
	CNGA543T0820	CNGA160612T02020																●			
	CNGA544T0820	CNGA160616T02020																●			
	CNGA642T0820	CNGA190608T02020																●			
	CNGA643T0820	CNGA190612T02020																●			
	CNGA644T0820	CNGA190616T02020																●			
CNGG-LF 	CNGG4305LF	CNGG120402LF		●																	
	CNGG430LF	CNGG120401LF		●																	
	CNGG431LF	CNGG120404LF		●																	
	CNGG432LF	CNGG120408LF		●																	
	CNGG433LF	CNGG120412LF		●																	
	CNGG543LF	CNGG160612LF		●																	
CNGP 	CNGP430	CNGP120401		●																	
	CNGP4305	CNGP120402		●	●																
	CNGP431	CNGP120404		●	●																
	CNGP432	CNGP120408		●	●																
	CNGP433	CNGP120412		●	●																
	CNGP434	CNGP120416		●																	
CNGP-K 	CNGP432K	CNGP120408K		●																	
	CNGP542K	CNGP160608K		●																	

Order example:
ANSI catalog number: CNGA432
Insert grade: KY2000

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
CNGP-R/L 	CNGP432L	CNGP120408L														●					
CNMA 	CNMA431	CNMA120404									●										
	CNMA432	CNMA120408		●							●	●									
	CNMA433	CNMA120412									●	●									
	CNMA543	CNMA160612									●	●									
	CNMA544	CNMA160616									●	●									
	CNMA643	CNMA190612									●	●									
	CNMA644	CNMA190616																			
CNMA-SM 	CNMA431S0420M	CNMA120404S01020M																		●	
	CNMA432S0420M	CNMA120408S01020M																		●	
CNMG 	CNMG120404	CNMG120404					●				●										
	CNMG431	CNMG120404B					●						●								
	CNMG432	CNMG120408	●	●		●	●	●	●	●	●	●	●	●							
	CNMG433	CNMG120412		●		●	●	●	●		●	●	●	●							
	CNMG434	CNMG120416					●	●	●				●								
	CNMG542	CNMG160608B					●														
	CNMG543	CNMG160612					●		●		●	●	●	●							
	CNMG544	CNMG160616					●		●												
	CNMG642	CNMG190608					●				●			●							
	CNMG643	CNMG190612		●			●		●		●	●	●	●							
	CNMG644	CNMG190616					●	●	●	●	●										
	CNMG866	CNMG250924					●														
CNMG-K	CNMG431K	CNMG120404K				●	●						●								
	CNMG432K	CNMG120408K					●						●	●							
CNMG-LF 	CNMG431LF	CNMG120404LF		●					●				●								
	CNMG432LF	CNMG120408LF		●				●	●				●								
	CNMG433LF	CNMG120412LF						●	●				●								

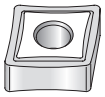
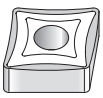
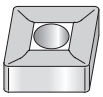
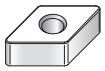
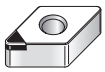
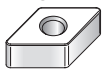
Order example:
ANSI catalog number: CNGP432L
Insert grade: K060

Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
CNMG-MG	CNMG431MG	CNMG120404MG					●		●				●								
	CNMG432MG	CNMG120408MG		●			●	●	●	●	●	●	●								
	CNMG433MG	CNMG120412MG					●	●	●			●	●								
	CNMG434MG	CNMG120416MG							●			●									
	CNMG543MG	CNMG160612MG					●		●			●	●								
	CNMG544MG	CNMG160616MG							●												
	CNMG642MG	CNMG190608MG						●					●								
	CNMG643MG	CNMG190612MG					●		●				●								
CNMG-P	CNMG431P	CNMG120404P		●			●						●								
	CNMG432P	CNMG120408P	●	●			●	●	●	●			●	●							
	CNMG433P	CNMG120412P					●		●				●								
	CNMG434P	CNMG120416P							●												
	CNMG543P	CNMG160612P					●														
	CNMG643P	CNMG190612P					●		●				●	●							
CNMM	CNMM432	CNMM120408					●														
CNMM-M	CNMM432M	CNMM120408M					●														
	CNMM433M	CNMM120412M												●							
	CNMM643M	CNMM190612M					●							●							
CNMM-MR	CNMM432MR	CNMM120408MR					●		●	●			●								
	CNMM433MR	CNMM120412MR					●		●				●								
	CNMM434MR	CNMM120416MR							●												
	CNMM543MR	CNMM160612MR					●		●				●								
	CNMM544MR	CNMM160616MR											●								
	CNMM643MR	CNMM190612MR					●		●	●			●								
	CNMM644MR	CNMM190616MR							●	●			●								
	CNMM646MR	CNMM190624MR							●												
CNMM-P	CNMM432P	CNMM120408P					●														
	CNMM433P	CNMM120412P					●														
	CNMM644P	CNMM190616P					●														
CNMM-RM	CNMM544RM	CNMM160616RM						●	●												
	CNMM546RM	CNMM160624RM							●												
	CNMM646RM	CNMM190624RM							●												

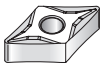
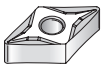
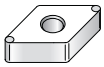
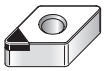
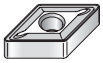
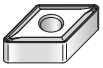
Order example:
ANSI catalog number: CNMG431MG
Insert grade: KC850

CN../DN..

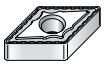
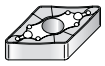
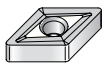
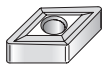
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
CNMP 	CNMP431	CNMP120404		●		●	●		●		●		●	●							
	CNMP432	CNMP120408		●		●	●	●	●		●	●	●	●							
	CNMP433	CNMP120412		●			●														
	CNMP542	CNMP160608					●						●								
	CNMP543	CNMP160612					●						●								
	CNMP642	CNMP190608					●				●		●								
	CNMP643	CNMP190612		●			●						●	●							
CNMP-K	CNMP431K	CNMP120404K					●						●								
	CNMP432K	CNMP120408K				●	●	●	●				●	●							
	CNMP643K	CNMP190612K					●														
CNMS 	CNMS432	CNMS120408		●			●		●				●								
	CNMS642	CNMS190608		●			●														
	CNMS643	CNMS190612		●			●														
CNMX 	CNMX120408	CNMX120408					●														
DNGA 	DNGA432	DNGA150408									●			●							
	DNGA432S0420	DNGA150408S01020																		●	
DNGA-SM 	DNGA432S0420M	DNGA150408S01020M																		●	
	DNGA442S0420M	DNGA150608S01020M																		●	●
DNGA-T 	DNGA433T0820	DNGA150412T02020															●				
	DNGA434T0820	DNGA150416T02020															●				
	DNGA442T0820	DNGA150608T02020															●				
	DNGA443T0820	DNGA150612T02020															●				
	DNGA543T	DNGA190612T															●				

Order example:
ANSI catalog number: CNMP431
Insert grade: KC730

Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
DNGG-LF	DNGG4305LF	DNGG150402LF		●	●																
	DNGG431LF	DNGG150404LF		●	●																
	DNGG432LF	DNGG150408LF		●	●																
	DNGG433LF	DNGG150412LF		●																	
DNGP 	DNGP430	DNGP150401		●																	
	DNGP4305	DNGP150402		●																	
	DNGP431	DNGP150404		●	●																
	DNGP432	DNGP150408		●																	
DNGP-K 	DNGP431K	DNGP150404K		●	●																
	DNGP432K	DNGP150408K		●	●																
	DNGP433K	DNGP150412K		●																	
DNGZ 	DNGZ431	DNGZ150404														●					
DNMA-SM 	DNMA431S0420M	DNMA150404S01020M																		●	
	DNMA432S0420M	DNMA150408S01020M																		●	
DNMG 	DNMG150408	DNMG150408					●														
	DNMG150608	DNMG150608					●				●										
	DNMG150612	DNMG150612					●														
	DNMG431	DNMG150404B					●						●								
	DNMG432	DNMG150408B		●		●	●	●	●		●	●	●	●							
	DNMG433	DNMG150412B					●														
	DNMG441	DNMG150604B					●				●										
	DNMG442	DNMG150608B									●										
	DNMG542	DNMG190608B					●														
	DNMG543	DNMG190612					●						●								
DNMG-K 	DNMG431K	DNMG150404K		●			●														
	DNMG432K	DNMG150408K					●						●	●							
	DNMG441K	DNMG150604K					●														
	DNMG442K	DNMG150608K					●							●							
	DNMG443K	DNMG150612K												●							
	DNMG542K	DNMG190608K												●							

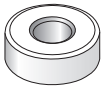
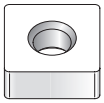
Order example:
ANSI catalog number: DNGG4305LF
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
DNMG-LF	DNMG431LF	DNMG150404LF		●																	
	DNMG432LF	DNMG150408LF						●	●				●								
DNMG-MG 	DNMG432MG	DNMG150408MG					●	●	●	●		●	●								
	DNMG442MG	DNMG150608MG					●		●				●								
	DNMG443MG	DNMG150612MG							●				●								
	DNMG444MG	DNMG150616MG							●				●								
DNMG-P	DNMG431P	DNMG150404P		●									●								
	DNMG432P	DNMG150408P		●			●						●								
	DNMG441P	DNMG150604P					●														
	DNMG442P	DNMG150608P					●						●								
DNMM-MR 	DNMM443MR	DNMM150612MR							●												
DNMP 	DNMP431	DNMP150404		●		●	●						●								
	DNMP432	DNMP150408		●		●	●		●												
	DNMP443	DNMP150612					●														
DNMP-K	DNMP331K	DNMP110404K					●														
	DNMP332K	DNMP110408K		●									●								
	DNMP431K	DNMP150404K							●				●								
	DNMP432K	DNMP150408K					●	●	●				●	●							
	DNMP433K	DNMP150412K							●				●								
	DNMP441K	DNMP150604K				●															
	DNMP442K	DNMP150608K					●						●								
	DNMP543K	DNMP190612K												●							
DNMS 	DNMS432	DNMS150408		●		●	●														
	DNMS542	DNMS190608					●														

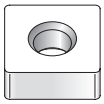
Order example:
ANSI catalog number: DNMG431LF
Insert grade: KC730

KENLOC Inserts

Grade Selection

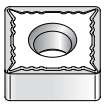
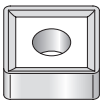
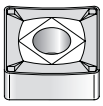
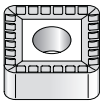
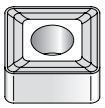
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
RCMA-T	RCMA88T	RCMA251200T																●			
RNGA-T 	RNGA43T0820	RNGA120400T02020																●			
RNMA-T	RNMA64T	RNMA190600T					●														
RNMG	RNMG43 RNMG64 RNMG86	RNMG120400 RNMG190600 RNMG250900					● ●							● ●							
SNGA-T 	SNGA432T0820 SNGA433T0820	SNGA120408T02020 SNGA120412T02020																● ●			
SNGG-LF	SNGG322LF SNGG432LF	SNGG090308LF SNGG120408LF		● 	 ●																
SNGP	SNGP432	SNGP120408		●	●																
SNGP-K	SNGP543K	SNGP150612K		●																	

Order example:
ANSI catalog number: RCMA88T
Insert grade: K090

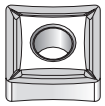
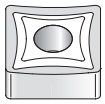
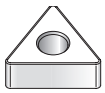
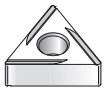
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
SNMA	SNMA322	SNMA090308					●				●										
	SNMA432	SNMA120408									●	●									
	SNMA433	SNMA120412										●									
	SNMA543	SNMA150612					●														
SNMA-T	SNMA644T	SNMA190616T									●										
SNMG	SNMG190616	SNMG190616					●														
	SNMG322	SNMG090308B					●						●								
	SNMG323	SNMG090312B					●														
	SNMG333	SNMG090412B					●						●								
	SNMG432	SNMG120408		●			●		●		●	●	●	●							
	SNMG433	SNMG120412					●	●				●	●	●							
	SNMG434	SNMG120416B					●														
	SNMG4534	SNMG140416B					●														
	SNMG543	SNMG150612					●		●			●									
	SNMG544	SNMG150616B					●		●				●								
	SNMG5544	SNMG170616B					●														
	SNMG643	SNMG190612					●						●	●							
	SNMG644	SNMG190616B					●				●			●							
	SNMG856	SNMG250724					●														
	SNMG866	SNMG250924					●														
SNMG-K	SNMG322K	SNMG090308K		●			●														
	SNMG432K	SNMG120408K					●														
	SNMG543K	SNMG150612K					●														
SNMG-MG	SNMG432MG	SNMG120408MG					●		●				●								
	SNMG433MG	SNMG120412MG								●		●	●								
	SNMG434MG	SNMG120416MG						●					●								
	SNMG643MG	SNMG190612MG					●						●								
SNMG-P	SNMG432P	SNMG120408P		●			●														
	SNMG433P	SNMG120412P					●														

Order example:
ANSI catalog number: SNMA322
Insert grade: KC850

Grade Selection

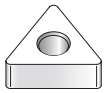
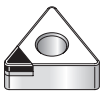
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
SNMG-UF 	SNMG322UF	SNMG090308UF													●						
	SNMG432UF	SNMG120408UF	●																		
SNMM 	SNMM432	SNMM120408				●															
	SNMM432P	SNMM120408P					●														
	SNMM644	SNMM190616					●														
SNMM-M 	SNMM644M	SNMM190616M					●														
SNMM-MR	SNMM543MR	SNMM150612MR								●											
	SNMM643MR	SNMM190612MR							●												
	SNMM644MR	SNMM190616MR							●	●											
	SNMM866MR	SNMM250924MR							●	●											
SNMM-ND 	SNMM644ND	SNMM190616ND					●														
SNMM-SP 	SNMM250724SP	SNMM250724SP					●														
SNMP	SNMP431	SNMP120404									●										
	SNMP432	SNMP120408					●														
	SNMP433	SNMP120412				●															
	SNMP436	SNMP120424				●															
	SNMP542	SNMP150608					●														
	SNMP543	SNMP150612					●														
	SNMP643	SNMP190612					●														

Order example:
ANSI catalog number: SNMG322UF
Insert grade: KT125

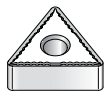
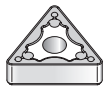
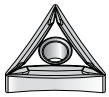
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
SNMP-K 	SNMP432K	SNMP120408K				●	●														
	SNMP433K	SNMP120412K					●														
SNMS 	SNMS432	SNMS120408				●	●						●								
	SNMS643	SNMS190612				●	●														
TNGA-T 	TNGA322T	TNGA160308T																●			
	TNGA332T0820	TNGA160408T02020																●			
	TNGA333T0820	TNGA160412T02020																●			
	TNGA432T0820	TNGA220408T02020																●			
TNGG-LF	TNGG3305LF	TNGG160402LF		●																	
	TNGG331LF	TNGG160404LF		●																	
	TNGG432LF	TNGG220408LF		●																	
TNGG-R/L 	TNGG331R	TNGG160404R																●			
TNGP	TNGP3305	TNGP160402		●																	
	TNGP331	TNGP160404		●																	
	TNGP332	TNGP160408		●																	
TNGP-K	TNGP331K	TNGP160404K		●																	
	TNGP332K	TNGP160408K		●																	
TNGP-R/L	TNGP331L	TNGP160404L																●			
	TNGP331R	TNGP160404R																●			

Order example:
ANSI catalog number: SNMP432K
Insert grade: KC810

Grade Selection

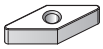
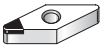
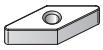
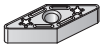
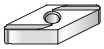
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
TNMA	TNMA331	TNMA160404									●										
	TNMA332	TNMA160408									●	●		●							
	TNMA333	TNMA160412						●			●	●									
	TNMA432	TNMA220408					●														
	TNMA544	TNMA270616		●			●					●									
TNMA-S	TNMA432S0420	TNMA220408S01020																		●	
																					
TNMA-SM	TNMA331S0420M	TNMA160404S01020M																		●	
	TNMA332S0420M	TNMA160408S01020M																		●	
TNMG	TNMG160408	TNMG160408					●				●										
	TNMG220404	TNMG220404					●														
	TNMG222	TNMG110308B					●														
	TNMG321	TNMG160304B					●														
	TNMG322	TNMG160308B					●														
	TNMG331	TNMG160404B					●														
	TNMG332	TNMG160408B		●			●		●		●	●	●								
	TNMG333	TNMG160412					●														
	TNMG431	TNMG220404B					●														
	TNMG432	TNMG220408		●		●	●		●	●	●	●	●								
	TNMG433	TNMG220412					●		●												
	TNMG434	TNMG220416				●	●					●									
	TNMG436	TNMG220424					●														
	TNMG438	TNMG220432					●	●				●									
	TNMG542	TNMG270608					●														
	TNMG543	TNMG270612					●														
	TNMG544	TNMG270616					●														
	TNMG666	TNMG330924					●														
TNMG-FW	TNMG332FW	TNMG160408FW						●													
TNMG-K	TNMG332K	TNMG160408K					●														
	TNMG432K	TNMG220408K					●														
	TNMG433K	TNMG220412K												●							

Order example:
ANSI catalog number: TNMA331
Insert grade: KC910

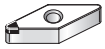
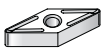
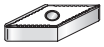
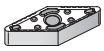
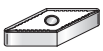
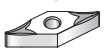
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
TNMG-LF	TNMG333LF	TNMG160412LF							●												
TNMG-MG	TNMG332MG	TNMG160408MG					●		●			●	●								
	TNMG432MG	TNMG220408MG					●		●				●								
	TNMG433MG	TNMG220412MG							●	●			●								
	TNMG544MG	TNMG270616MG							●												
TNMG-P	TNMG332P	TNMG160408P		●			●		●												
	TNMG431P	TNMG220404P					●														
	TNMG432P	TNMG220408P		●			●		●												
TNMG-UF 	TNMG332UF	TNMG160408UF		●											●						
	TNMG432UF	TNMG220408UF																			
TNMM-MR 	TNMM432MR	TNMM220408MR					●														
	TNMM434MR	TNMM220416MR							●												
	TNMM666MR	TNMM330924MR							●												
TNMP	TNMP331	TNMP160404					●														
	TNMP332	TNMP160408					●														
	TNMP431	TNMP220404					●						●								
	TNMP432	TNMP220408		●			●						●								
	TNMP434	TNMP220416					●														
	TNMP438	TNMP220432				●															
	TNMP542	TNMP270608					●														
	TNMP543	TNMP270612					●														
	TNMP544	TNMP270616					●														
TNMP-K 	TNMP331K	TNMP160404K				●	●														
	TNMP332K	TNMP160408K				●	●		●				●								
	TNMP432K	TNMP220408K					●							●							

Order example:
ANSI catalog number: TNMG333LF
Insert grade: KC9025

Grade Selection

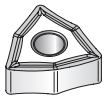
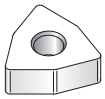
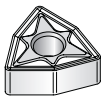
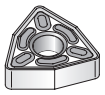
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
TNMS	TNMS331	TNMS160404					●														
	TNMS332	TNMS160408				●	●														
	TNMS431	TNMS220404					●														
	TNMS432	TNMS220408				●	●														
	TNMS433	TNMS220412					●														
VNGA 	VNGA332	VNGA160408					●														
VNGA-SM 	VNGA331S0420M	VNGA160404S01020M																		●	
VNGA-T 	VNGA331T	VNGA160404T																●			
	VNGA332T0820	VNGA160408T02020																●			
	VNGA333T0820	VNGA160412T02020																●			
	VNGA432T0820	VNGA220408T02020																●			
VNGG-LF 	VNGG3305LF	VNGG160402LF		●	●																
	VNGG331LF	VNGG160404LF		●																	
	VNGG332LF	VNGG160408LF		●																	
VNGP	VNGP330	VNGP160401		●																	
	VNGP3305	VNGP160402		●									●								
	VNGP431	VNGP220404		●			●														
	VNGP432	VNGP220408		●			●						●								
VNGP-K	VNGP331K	VNGP160404K		●	●																
	VNGP332K	VNGP160408K		●	●																
VNGP-R/L 	VNGP331R	VNGP160404R														●					

Order example:
ANSI catalog number: TNMS331
Insert grade: KC850

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
VNMA-SM 	VNMA331S0420M VNMA332S0420M	VNMA160404S01020M VNMA160408S01020M																		● ●	
VNMG 	VNMG332 VNMG333 VNMG432 VNMG433	VNMG160408 VNMG160412 VNMG220408 VNMG220412		● 		● 	● ● ●	 	● ● ● ●	 	● ● 	 	● ● ● 	● ● ● 							
VNMG-LF 	VNMG332LF VNMG431LF VNMG432LF	VNMG160408LF VNMG220404LF VNMG220408LF							● ● ●				● ●								
VNMG-P 	VNMG331P VNMG332P VNMG333P	VNMG160404P VNMG160408P VNMG160412P		● ●			● ●		●		 ● ●		● ●								
VNMG-UF 	VNMG331UF	VNMG160404UF		●									●								
VNMP	VNMP331 VNMP332	VNMP160404 VNMP160408				● ●	● ●		 ●				● ●	● ●							
VNMP-K	VNMP331K VNMP332K	VNMP160404K VNMP160408K				● ●	● 	● ●	 ●				● ●								
VNMS 	VNMS331 VNMS332	VNMS160404 VNMS160408		●			● ●						●								

Order example:
ANSI catalog number: VNMA331S0420M
Insert grade: KD050

Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC9045	KC910	KC9120	KC935	KC950	KT125	KT150	K060	K090	KY2000	KD050	KD081
WNGP-K 	WNGP432K	WNGP080408K		●																	
WNMA 	WNMA432	WNMA080408									●	●									
WNMG	WNMG432	WNMG080408		●			●				●	●	●								
WNMG-LF	WNMG432LF	WNMG080408LF		●								●	●								
WNMG-MG 	WNMG432MG WNMG433MG WNMG434MG	WNMG080408MG WNMG080412MG WNMG080416MG					●	● ● ●	● ●	●		●	● ● ●								
WNMG-P 	WNMG432P	WNMG080408P		●			●						●								

Order example:
ANSI catalog number: WNGP432K
Insert grade: KC730

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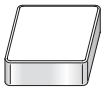
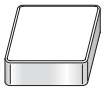
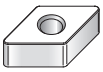
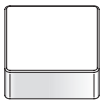
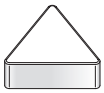
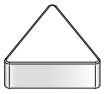
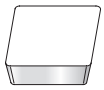
Grade Selection

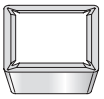
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC910	KC9120	KC935	KC950	KT125	KT150	K090	KY2000	KD050	KD200	KD230	KD240
CNG 	CNG432T0820	CNGN120408T02020													●					
	CNG433T0820	CNGN120412T02020													●					
	CNG452T0820	CNGN120708T02020													●					
	CNG453T0820	CNGN120712T02020													●					
	CNG454T0820	CNGN120716T02020													●					
CNM 	CNM322T0820	CNMN090308T02020																●		●
	CNM323T0820	CNMN090312T02020																●		
DNG-T 	DNGA432T	DNGA150408T													●					
RNG	RNG32T0820	RNGN090300T02020													●					
	RNG42T0820	RNGN120300T02020													●				●	
	RNG43	RNGN120400					●									●				
	RNG43T0820	RNGN120400T02020													●	●				
	RNG45	RNGN120700														●				
	RNG45T0820	RNGN120700T02020													●					
	RNG65T0820	RNGN190700T02020													●					
RNM	RNM32	RNMN090300																		●
	RNM32T0820	RNMN090300T02020																●		●
	RNM42	RNMN120300																		●
	RNM42T0820	RNMN120300T02020																●		●
SNG	SNG322	SNGN090308										●								
	SNG322T0820	SNGN090308T02020													●				●	
	SNG432	SNGN120408													●					
	SNG432T0820	SNGN120408T02020							●											
	SNG433	SNGN120412													●					
	SNG433T0820	SNGN120412T02020													●					
	SNG434T0820	SNGN120416T02020													●					
	SNG438T0820	SNGN120432T02020													●					
	SNG453T0820	SNGN120712T02020													●					
	SNG454T0820	SNGN120716T02020													●	●				
	SNG633	SNGN190412					●													
	SNG638	SNGN190432				●														
	SNG644T0820	SNGN190616T02020													●	●				
	SNG656	SNGN190724														●				

Order example:
ANSI catalog number: CNG432T0820
Insert grade: K090

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC910	KC9120	KC935	KC950	KT125	KT150	K090	KY2000	KD050	KD200	KD230	KD240
SNM	SNM322	SNMN090308																		●
	SNM422T0820	SNMN120308T02020																		●
	SNM424T0820	SNMN120316T02020																		●
SNU 	SNU432	SNUN120408					●													
	SNU433	SNUN120412		●			●		●											
	SNU633	SNUN190412				●	●													
	SNU634	SNUN190416					●													
TNG 	TNG222	TNGN110308					●													
	TNG322	TNGN160308				●														
	TNG332T0820	TNGN160408T02020													●					
	TNG334T0820	TNGN160416T02020													●					
	TNG432T0820	TNGN220408T02020													●					
	TNG433T0820	TNGN220412T02020													●					
TNM	TNM222	TNMN110308																		●
	TNM222T0820	TNMN110308T02020																		●
TNU 	TNU333	TNUN160412							●											
	TNU544	TNUN270616					●													
CPG 	CPG421	CPGN120304		●			●													
	CPG422	CPGN120308		●	●		●		●											
CPGF-K	CPGF422	CPGR120308K					●													
RCGV	RCGV23	RCGV060400									●									
	RCGV35	RCGV090700		●	●											●				
	RCGV45	RCGV120700														●				

Order example:
ANSI catalog number: SNM322
Insert grade: KD240

Grade Selection

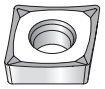
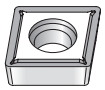
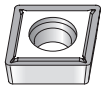
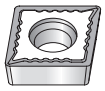
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC910	KC9120	KC935	KC950	KT125	KT150	K090	KY2000	KD050	KD200	KD230	KD240
RPG	RPG32T0420	RPGN090300T01020													●					
	RPG43	RPGN120400		●																
SPG	SPG322	SPGN090308		●		●	●		●	●										
	SPG421	SPGN120304		●			●		●											
	SPG422	SPGN120308	●	●	●	●	●			●										
	SPG423	SPGN120312		●			●		●											
	SPG424	SPGN120316					●													
	SPG432	SPGN120408			●															
	SPG433	SPGN120412		●			●													
	SPG433T0420	SPGN120412T01020													●					
	SPG532	SPGN150408		●																
	SPG6305	SPGN190402					●													
	SPG632	SPGN190408					●													
	SPG633	SPGN190412	●	●			●													
	SPG634	SPGN190416					●													
	SPG638	SPGN190432					●		●											
SPGF	SPGF321	SPGR090304K				●														
	SPGF322	SPGR090308K				●	●							●						
	SPGF422	SPGR120308K					●													
SPMR 	SPMR322	SPMR090308				●	●													
	SPMR421	SPMR120304				●	●													
	SPMR422	SPMR120308					●													
	SPMR423	SPMR120312					●													
SPU	SPU322	SPUN090308							●											
	SPU422	SPUN120308					●		●											
	SPU633	SPUN190412					●					●								
	SPU634	SPUN190416					●													
TPG	TPG221	TPGN110304		●			●		●									●		
	TPG221T	TPGN110304T												●						
	TPG221T0420	TPGN110304T01020													●					
	TPG222	TPGN110308		●		●	●		●											
	TPG222T0420	TPGN110308T01020													●					
	TPG223T0420	TPNG110312T01020													●					
KD050	TPG3205	TPGN160302		●																
	TPG321	TPGN160304		●	●	●	●		●									●		
	TPG321T0420	TPGN160304T01020													●					
	TPG322	TPGN160308	●	●		●	●		●	●		●				●		●		
	TPG322T	TPGN160308T											●							
	TPG322T0420	TPGN160308T01020													●					
	TPG323	TPGN160312		●			●		●											
	TPG323T	TPGN160312T											●							
	TPG323T0420	TPGN160312T01020													●					

Order example:
ANSI catalog number: SPMR322
Insert grade: KC810

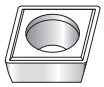
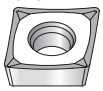
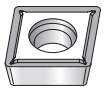
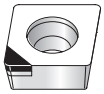
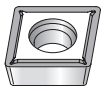
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC910	KC9120	KC935	KC950	KT125	KT150	K090	KY2000	KD050	KD200	KD230	KD240
TPG	TPG324	TPGN160316		●			●		●											
	TPG431	TPGN220404		●		●	●													
	TPG432	TPGN220408	●	●		●	●		●	●		●								
	TPG432T0820	TPGN220408T01020													●					
	TPG433	TPGN220412		●			●		●											
	TPG434	TPGN220416		●			●													
	TPG438	TPGN220432					●													
	TPG542	TPGN270608				●	●													
	TPG543	TPGN270612					●													
	TPG544	TPGN270616					●													
TPGF	TPGF221	TPGR110304K					●													
	TPGF222	TPGR110308K												●						
	TPGF321	TPGR160304K					●							●						
	TPGF322	TPGR160308K				●	●	●	●			●		●						
	TPGF431	TPGR220404K					●													
	TPGF432	TPGR220408K					●													
TPG-M	TPG221S0420M	TPGN110304S01020M															●			
	TPG222S0420M	TPGN110308S01020M															●			
	TPG321S0420M	TPGN160304S01020M															●			
	TPG322S0420M	TPGN160308S01020M															●			
TPMR	TPMR221	TPMR110304				●	●													
	TPMR222	TPMR110308				●	●													
	TPMR321	TPMR160304				●	●	●												
	TPMR322	TPMR160308					●	●												
	TPMR323	TPMR160312					●													
	TPMR432	TPMR220408		●		●														
	TPMR433	TPMR220412					●													
TPU	TPU221	TPUN110304							●											
	TPU222	TPUN110308							●											
	TPU321	TPUN160304					●		●											
	TPU322	TPUN160308		●		●	●		●											
	TPU323	TPUN160312					●		●											
	TPU431	TPUN220404				●														
	TPU432	TPUN220408				●	●		●											
	TPU433	TPUN220412					●		●											

Order example:
ANSI catalog number: TPG543
Insert grade: KC850

Grade Selection

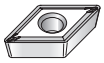
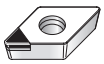
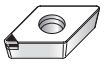
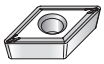
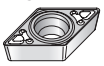
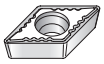
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
CCGT-HP 	CCGT21505HP	CCGT060202HP		●														
	CCGT2151HP	CCGT060204HP		●														
	CCGT32505HP	CCGT09T302HP		●														
	CCGT3251HP	CCGT09T304HP		●														
	CCGT431HP	CCGT120404HP		●														
	CCGT432HP	CCGT120408HP		●														
CCGT-LF 	CCGT21505LF	CCGT060202LF		●														
	CCGT2150LF	CCGT060201LF		●														
	CCGT2151LF	CCGT060204LF		●														
	CCGT32505LF	CCGT09T302LF		●														
	CCGT3250LF	CCGT09T301LF		●														
	CCGT3251LF	CCGT09T304LF		●														
	CCGT3252LF	CCGT09T308LF		●														
CCGW-M	CCGW21505EM	CCGW060202EM															●	
	CCGW2151S0415M	CCGW060204S01015M															●	●
	CCGW3251S0415M	CCGW09T304S01015M															●	●
	CCGW3252S0415M	CCGW09T308S01015M															●	
CCMT-LF 	CCMT21505LF	CCMT060202LF		●		●	●		●	●		●						
	CCMT2151LF	CCMT060204LF	●	●		●	●			●		●						
	CCMT2152LF	CCMT060208LF		●			●					●						
	CCMT32505LF	CCMT09T302LF		●			●					●				●		
	CCMT3251LF	CCMT09T304LF	●	●		●	●			●	●	●						
	CCMT3252LF	CCMT09T308LF	●	●		●	●			●	●	●						
	CCMT431LF	CCMT120404LF	●	●			●					●						
	CCMT432LF	CCMT120408LF	●	●			●			●		●						
	CCMT433LF	CCMT120412LF					●											
CCMT-MF	CCMT2151MF	CCMT060204MF		●								●						
	CCMT3251MF	CCMT09T304MF		●								●						
	CCMT3252MF	CCMT09T308MF		●								●						
CCMT-UF 	CCMT3251UF	CCMT09T304UF		●														
CDHB	CDHB120601	CDHBS4T000		●														
	CDHB120605	CDHBS4T002		●								●						
	CDHB12061	CDHBS4T004		●								●						

Order example:
ANSI catalog number: CCGT21505HP
Insert grade: KC730

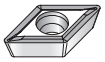
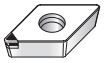
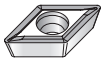
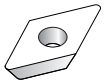
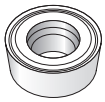
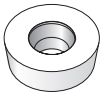
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
CPGB	CPGB3252	CPGB09T308															●	
CPGM 	CPGM2150	CPGT060201K		●			●											
	CPGM21505	CPGT060202K		●			●					●						
	CPGM2151	CPGT060204K	●	●		●	●	●	●	●		●	●		●			
	CPGM2152	CPGT060208K		●			●		●	●		●	●					
	CPGM3250	CPGH09T301	●	●														
	CPGM32505	CPGH09T302		●			●					●						
	CPGM3251	CPGH09T304		●		●	●			●		●	●		●			
	CPGM3252	CPGH09T308	●	●		●	●			●	●	●	●			●		
CPGT-HP 	CPGT21505HP	CPGT060202HP		●														
	CPGT2151HP	CPGT060204HP		●														
	CPGT32505HP	CPGT09T302HP		●														
	CPGT3251HP	CPGT09T304HP		●														
CPGT-LF 	CPGT21505LF	CPGT060202LF		●														
	CPGT2150LF	CPGT060201LF		●														
	CPGT2151LF	CPGT060204LF	●	●		●												
	CPGT32505LF	CPGT09T302LF		●	●													
	CPGT3251LF	CPGT09T304LF	●	●														
CPGW 	CPGW2151	CPGW060204															●	
	CPGW2152	CPGW060208															●	
	CPGW3251	CPGW09T304															●	
	CPGW3252	CPGW09T308															●	
CPGW-M	CPGW21505EM	CPGW060202EM															●	
	CPGW2151S0415M	CPGW060204S01015M															●	
	CPGW2152S0415M	CPGW060208S01015M															●	
CPMT-LF 	CPMT181505LF	CPMT050202LF		●														
	CPMT18151LF	CPMT050204LF		●		●			●			●						
	CPMT21505LF	CPMT060202LF		●		●	●					●						
	CPMT2151LF	CPMT060204LF	●	●		●	●				●	●	●					
	CPMT2152LF	CPMT060208LF		●			●				●	●	●					
	CPMT32505LF	CPMT09T302LF		●			●											
	CPMT3251LF	CPMT09T304LF		●		●	●			●		●	●					
	CPMT3252LF	CPMT09T308LF	●	●	●	●	●			●	●	●	●					

Order example:
ANSI catalog number: CPGB3252
Insert grade: KD050

Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
CPMT-MF	CPMT2152MF	CPMT060208MF		●								●						
	CPMT3252MF	CPMT09T308MF		●							●	●						
DCGT-HP	DCGT21505HP	DCGT070202HP		●														
	DCGT2151HP	DCGT070204HP	●	●														
	DCGT32505HP	DCGT11T302HP		●														
	DCGT3251HP	DCGT11T304HP	●	●														
	DCGT3252HP	DCGT11T308HP		●														
DCGT-LF 	DCGT2150LF	DCGT070201LF		●														
	DCGT3250LF	DCGT11T301LF		●														
	DCGT432LF	DCGT150408LF		●														
DCGW 	DCGW3251S0415	DCGW11T304S01015															●	●
	DCGW3252S0415	DCGW11T308S01015																●
DCGW-M 	DCGW2151S0415M	DCGW070204S01015M															●	
DCMT-LF 	DCMT21505LF	DCMT070202LF		●			●					●						
	DCMT2151LF	DCMT070204LF		●			●					●						
	DCMT32505LF	DCMT11T302LF		●		●	●	●				●						
	DCMT3251LF	DCMT11T304LF	●	●		●	●			●		●						
	DCMT3252LF	DCMT11T308LF		●		●	●			●	●	●						
	DCMT3253LF	DCMT11T312LF		●														
	DCMT431LF	DCMT150404LF					●					●						
	DCMT432LF	DCMT150408LF					●					●						
DCMT-MF 	DCMT3251MF	DCMT11T304MF		●								●						
	DCMT3252MF	DCMT11T308MF		●								●						
	DCMT3253MF	DCMT11T312MF		●														
DCMT-UF 	DCMT32505UF	DCMT11T302UF		●														

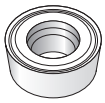
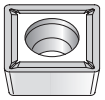
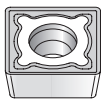
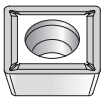
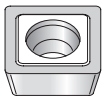
Order example:
ANSI catalog number: CPMT2152MF
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
DPGT-HP	DPGT21505HP	DPGT070202HP		●														
	DPGT2151HP	DPGT070204HP		●														
	DPGT3251HP	DPGT11T304HP		●														
	DPGT3252HP	DPGT11T308HP		●														
DPGT-LF 	DPGT21505LF	DPGT070202LF		●														
	DPGT2150LF	DPGT070201LF		●														
	DPGT2151LF	DPGT070204LF		●	●													
	DPGT32505LF	DPGT11T302LF		●														
	DPGT3250LF	DPGT11T301LF		●														
	DPGT3251LF	DPGT11T304LF		●														
	DPGT3252LF	DPGT11T308LF		●														
DPGW-M 	DPGW3251S0415M	DPGW11T304S01015M															●	
DPMT-LF 	DPMT21505LF	DPMT070202LF		●														
	DPMT2151LF	DPMT070204LF		●			●					●						
	DPMT3251LF	DPMT11T304LF		●			●					●						
	DPMT3252LF	DPMT11T308LF		●			●				●	●						
FFEW 	FFEW533R	FFEW533R		●														
RCGM 	RCGM325	RCGH09T300											●					
RCGT-HP	RCGT0803M0HP	RCGT0803M0HP		●														
	RCGT10T3M0HP	RCGT10T3M0HP		●														
RCGW 	RCGW215	RCGW060200		●														

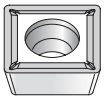
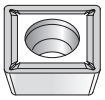
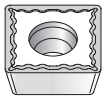
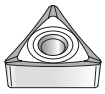
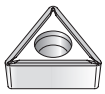
Order example:
ANSI catalog number: DPGT21505HP
Insert grade: KC730

SCREW-ON Inserts

Grade Selection

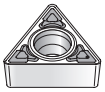
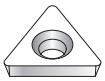
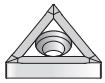
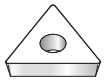
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
RCMT	RCMT215	RCMT060200		●			●											
	RCMT0803M0	RCMT0803M0		●			●			●								
	RCMT325	RCMT09T300		●														
	RCMT10T3M0	RCMT10T3M0		●			●			●								
	RCMT1204M0	RCMT1204M0		●			●			●								
	RCMT1605M0	RCMT1605M0		●			●											
	RCMT2006M0	RCMT2006M0		●			●											
RCMX 	RCMX120400	RCMX120400					●											
	RCMX160600	RCMX160600					●						●					
	RCMX200600	RCMX200600					●											
	RCMX250700	RCMX250700					●						●					
	RCMX320900	RCMX320900							●									
	RCMX3209M076	RCMX3209M076						●	●									
RCMX-M	RCMX2507M076	RCMX2507M076							●									
SCMT-LF 	SCMT3251LF	SCMT09T304LF		●		●	●					●						
	SCMT3252LF	SCMT09T308LF	●	●			●			●	●	●						
	SCMT431LF	SCMT120404LF					●											
	SCMT432LF	SCMT120408LF	●	●			●			●	●	●						
	SCMT433LF	SCMT120412LF					●			●		●						
SCMT-MF 	SCMT3252MF	SCMT09T308MF		●								●						
	SCMT432MF	SCMT120408MF		●								●						
SPGH 	SPGH322	SPGH090308											●					
SPGM 	SPGM2153	SPGT060212K					●											
	SPGM2523	SPGT070312K					●											

Order example:
ANSI catalog number: RCMT0803M0
Insert grade: KC730

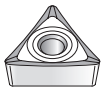
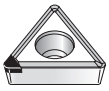
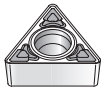
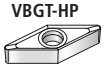
	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
SPGT-LF 	SPGT3251LF	SPGT09T304LF					●											
	SPGT3252LF	SPGT09T308LF	●	●														
	SPGT432LF	SPGT120408LF		●														
SPMT-LF 	SPMT3251LF	SPMT09T304LF		●			●					●						
	SPMT3252LF	SPMT09T308LF		●			●			●		●						
SPMT-MF	SPMT3252MF	SPMT09T308MF		●								●						
	SPMT432MF	SPMT120408MF		●								●						
SPMT-UF 	SPMT3251UF	SPMT09T304UF						●										
TCGT-HP 	TCGT21505HP	TCGT110202HP		●														
	TCGT2151HP	TCGT110204HP		●														
	TCGT3251HP	TCGT16T304HP		●														
	TCGT3252HP	TCGT16T308HP		●														
TCGT-LF	TCGT2150LF	TCGT110201LF		●														
TCGW-M	TCGW2151S0415M	TCGW110204S01015M															●	●
TCMT-LF 	TCMT21505LF	TCMT110202LF		●			●											
	TCMT2151LF	TCMT110204LF	●	●		●	●			●		●						
	TCMT2152LF	TCMT110208LF		●		●	●			●		●						
	TCMT3251LF	TCMT16T304LF		●			●			●		●						
	TCMT3252LF	TCMT16T308LF		●			●			●	●	●	●					
	TCMT3253LF	TCMT16T312LF	●	●	●		●											
	TCMT432LF	TCMT220408LF	●				●			●		●						

Order example:
ANSI catalog number: SPGT3251LF
Insert grade: KC850

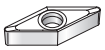
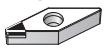
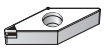
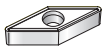
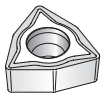
Grade Selection

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
TCMT-MF 	TCMT3252MF	TCMT16T308MF		●								●						
TDHB	TDHB1280751	TDHB07T1204																●
TDHB 	TDHB12807501 TDHB12807505 TDHB1280751	TDHB07T1200 TDHB07T1202 TDHB07T1204		● ● ●														
TDHH	TDHH12807505L TDHH12807505R TDHH1280751L	TDHH07T1202L TDHH07T1202R TDHH07T1204L		● ● ●														
T-F 	T220F	T110301F		●														
TP 	TP41 TP62	TPGA110204 TPGA160308		●			●			● 								
T-P	T221P T321P T322P	T110304P T160304P T160308P				●	● ● ●											
TPGM	TPGM2150 TPGM21505 TPGM2151 TPGM2152 TPGM3252	TPGT110201K TPGT110202K TPGT110204K TPGT110208K TPGH16T308	●	● ● ● ● ●		● ● ●	● ● ●			● ● 		● ● ●		● ● 				

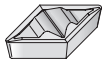
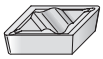
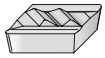
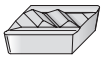
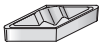
Order example:
ANSI catalog number: TCMT3252MF
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
TPGT-HP 	TPGT21505HP	TPGT110202HP		●														
	TPGT2151HP	TPGT110204HP		●														
	TPGT3251HP	TPGT16T304HP		●														
	TPGT3252HP	TPGT16T308HP		●														
TPGT-LF	TPGT2150LF	TPGT110201LF		●														
	TPGT2151LF	TPGT110204LF		●														
	TPGT3251LF	TPGT16T304LF		●														
	TPGT3252LF	TPGT16T308LF		●														
TPGW-M	TPGW2151S0415M	TPGW110204S01015M															●	
	TPGW2152S0415M	TPGW110208S01015M															●	
TPMT-LF	TPMT18151LF	TPMT090204LF		●		●	●			●		●	●					
	TPMT21505LF	TPMT110202LF		●														
	TPMT2151LF	TPMT110204LF		●		●	●			●		●						
	TPMT2152LF	TPMT110208LF		●			●	●				●						
	TPMT3251LF	TPMT16T304LF		●			●					●						
	TPMT3252LF	TPMT16T308LF	●	●			●			●	●	●						
TPMT-M 	TPMT18151S0415M	TPMT090204S01015M															●	
	TPMT2151S0415M	TPMT110204S01015M															●	
	TPMT2152S0415M	TPMT110208S01015M															●	
TPMT-MF 	TPMT3253MF	TPMT16T312MF		●								●						
TPMT-UF	TPMT2151UF	TPMT110204UF		●														
VBGT-HP 	VBGT331HP	VBGT160404HP		●														
	VBGT332HP	VBGT160408HP		●														

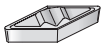
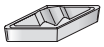
Order example:
ANSI catalog number: TPGT21505HP
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC720	KC730	KC732	KC810	KC850	KC9010	KC9025	KC910	KC9120	KC935	KC950	KT125	KT150	KT175	KD050	KD081
VBGT-LF 	VBGT2205LF	VBGT110302LF		●														
	VBGT220LF	VBGT110301LF		●														
	VBGT221LF	VBGT110304LF		●														
	VBGT3305LF	VBGT160402LF		●														
	VBGT330LF	VBGT160401LF		●														
	VBGT331LF	VBGT160404LF		●														
VBGW 	VBGW331S0415	VBGW160404S01015															●	
	VBGW332S0415	VBGW160408S01015															●	
VBGW-M 	VBGW331S0415M	VBGW160404S01015M															●	
VBMT-LF 	VBMT2205LF	VBMT110302LF		●								●						
	VBMT221LF	VBMT110304LF		●			●					●						
	VBMT222LF	VBMT110308LF		●			●					●						
	VBMT3305LF	VBMT160402LF	●	●			●					●						
	VBMT331LF	VBMT160404LF	●	●		●	●					●						
	VBMT332LF	VBMT160408LF	●	●		●	●			●		●						
	VBMT333LF	VBMT160412LF											●					
WCMT-LF 	WCMT2151LF	WCMT040204LF		●														
	WCMT3252LF	WCMT06T308LF							●									
WPMT-LF	WPMT15121LF	WPMTS3T104LF		●			●					●						
	WPMT2151LF	WPMT040204LF		●			●					●						
	WPMT3252LF	WPMT06T308LF		●								●						

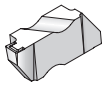
Order example:
ANSI catalog number: VBGT2205LF
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC730	KC732	KC850	KC9025	KC9120	KC910	KC935	KC950	KT125	KT150
TOP NOTCH Profiling Inserts												
DPGR 8° 	DPGR431	DCGR150404	●		●							
	DPGR432	DCGR150408	●	●	●	●	●			●		●
	DPGR433	DCGR150412		●								
NPGR 8° 	NPGR51L	KCGR110304L08	●		●	●				●	●	
	NPGR51R	KCGR110304R08	●		●	●				●	●	●
	NPGR52L	KCGR110308L08	●		●	●				●		
	NPGR52R	KCGR110308R08	●		●	●						
NPR/L 0° Inch	NPL131F	KNGX150404L20	●		●							
	NPL132F	KNGX150408L20	●		●							
	NPL132N	KNGX150408L25			●							
	NPR1305	KNGX150401R15	●									
	NPR1308	KNGX150402R15	●									
	NPR131F	KNGX150404R20	●		●							
	NPR132F	KNGX150408R20			●							
	NPR332	KNGX220408R32			●							
NPR/L 0° Metric	NPL13M05F	KNUX150405L20			●							
	NPL13M05N	KNUX150405L25			●							
	NPL13M10N	KNUX150410L25			●							
	NPR13M05F	KNUX150405R20			●							
	NPR13M05N	KNUX150405R25			●							
	NPR13M10N	KNUX150410R25			●							
NPR/L 8° Inch 	NPL505	KCGX110301L15	●		●						●	
	NPL508	KCGX110302L15	●								●	
	NPL51	KCGX110304L15	●		●						●	
	NPL52	KCGX110308L15	●		●					●		
	NPR505	KCGX110301R15	●		●						●	
	NPR508	KCGX110302R15	●									
	NPR51	KCGX110304R15	●		●	●				●	●	
	NPR52	KCGX110308R15	●		●							
NPR/L 8° Metric 	NPL5M02	KCUX110302L15			●							
	NPL5M05	KCUX110305L15			●							
	NPR5M02	KCUX110302R15			●							
	NPR5M05	KCUX110305R15			●							
VBMR 5° 	VBMR221	VBMR110304			●							
	VBMR222	VBMR110308			●							

Order example:
ANSI catalog number: DPGR431
Insert grade: KC730

	ANSI catalog number	ISO catalog number	KC730	KC732	KC850	KC9025	KC9120	KC910	KC935	KC950	KT125	KT150
VCMR 8° 	VCMR331	VCMR160404			●							
	VCMR332	VCMR160408			●							
VPGR 8° 	VPGR3305	VCGR160402	●									
	VPGR331	VCGR160404	●	●	●	●				●	●	●
	VPGR332	VCGR160408	●	●	●	●	●			●	●	●
	VPGR333	VCGR160412	●		●	●				●		●
	VPGR334	VCGR160416	●							●		
K-LOCK Inserts												
RCMK	RCMK152	RCMK040300	●									
	RCMK23	RCMK060400	●	●					●			
	RCMK35	RCMK090700	●					●	●			
	RCMK46	RCMK120800	●						●			

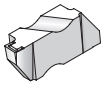
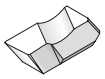
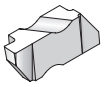
Order example:
ANSI catalog number: VCMR331
Insert grade: KC850

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Grooving Width W mm	Grooving Depth T inch	Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NG-K 	**Right hand**										
	NG2031RK	2	.031	0,79	.050	1,27	●	●	●	●	
	NG2M080RK	2	.032	0,80	.050	1,27		●			
	NG2M100RK	2	.039	1,00	.050	1,27	●	●			
	NG2047RK	2	.047	1,19	.050	1,27		●			
	NG2M120RK	2	.047	1,20	.050	1,27	●	●			
	NG2M140RK	2	.055	1,40	.050	1,27		●			
	NG2M150RK	2	.059	1,50	.110	2,79		●			
	NG2062RK	2	.062	1,58	.110	2,79	●	●	●	●	
	NG2M170RK	2	.067	1,70	.110	2,79	●	●			
	NG2M195RK	2	.077	1,95	.110	2,79		●			
	NG2M200RK	2	.079	2,00	.110	2,79	●	●			
	NG2M225RK	2	.088	2,25	.110	2,79	●	●			
	NG2094RK	2	.094	2,39	.110	2,79		●		●	
	NG2M300RK	2	.118	3,00	.110	2,79	●	●			
	NG2125RK	2	.125	3,18	.110	2,79		●			
	NG3M100RK	3	.039	1,00	.075	1,91		●			
	NG3047RK	3	.047	1,19	.075	1,91		●	●	●	
	NG3M120RK	3	.047	1,20	.075	1,91		●			
	NG3M150RK	3	.059	1,50	.094	2,39		●			
	NG3062RK	3	.062	1,58	.094	2,39	●	●	●	●	
	NG3M175RK	3	.069	1,75	.094	2,39		●			
	NG3072RK	3	.072	1,83	.094	2,39		●	●	●	
	NG3078RK	3	.078	1,98	.094	2,39		●	●	●	
	NG3M200RK	3	.079	2,00	.094	2,39		●			
	NG3M220RK	3	.087	2,20	.094	2,39		●			
	NG3M225RK	3	.088	2,25	.094	2,39		●	●		
	NG3094RK	3	.094	2,39	.150	3,81	●	●	●	●	●
	NG3M250RK	3	.098	2,50	.150	3,81		●			
	NG3M275RK	3	.108	2,75	.150	3,81		●			
	NG3M300RK	3	.118	3,00	.150	3,81		●	●		
	NG3125RK	3	.125	3,18	.150	3,81	●	●	●	●	
	NG3M325RK	3	.128	3,25	.150	3,81		●			
	NG3M350RK	3	.138	3,50	.150	3,81		●			
	NG3156RK	3	.156	3,96	.150	3,81	●	●	●	●	●
	NG3M400RK	3	.158	4,00	.150	3,81		●			
	NG3M450RK	3	.177	4,50	.150	3,81		●			
	NG3189RK	3	.189	4,80	.150	3,81	●	●	●	●	
	NG4125RK	4	.125	3,18	.150	3,81	●	●	●	●	
	NG4189RK	4	.189	4,80	.250	6,35	●	●	●	●	
	NG4M500RK	4	.197	5,00	.250	6,35		●			
	NG4M550RK	4	.217	5,50	.250	6,35		●			
	NG4250RK	4	.250	6,35	.250	6,35	●	●	●	●	●
	Left hand										
	NG2031LK	2	.031	0,79	.050	1,27		●			
	NG2M100LK	2	.039	1,00	.050	1,27		●			
	NG2047LK	2	.047	1,19	.050	1,27		●			
	NG2M120LK	2	.047	1,20	.050	1,27		●			
	NG2M140LK	2	.055	1,40	.050	1,27		●			
	NG2M150LK	2	.059	1,50	.110	2,79		●			
	NG2062LK	2	.062	1,58	.110	2,79		●	●	●	
	NG2M170LK	2	.067	1,70	.110	2,79		●			
	NG2M175LK	2	.069	1,75	.110	2,79		●			
	NG2M200LK	2	.079	2,00	.110	2,79	●	●			
	NG2M225LK	2	.088	2,25	.110	2,79	●	●			
	NG2094LK	2	.094	2,39	.110	2,79		●	●	●	
	NG2M275LK	2	.108	2,75	.110	2,79		●			

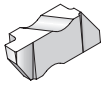
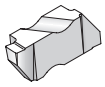
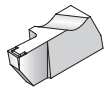
Order example:
Catalog number: NG2031RK
Insert grade: KC720

TOP NOTCH Grooving Inserts

Grade Selection and Dimensions

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Dimensions: Grooving Width W mm	Dimensions: Grooving Depth T inch	Dimensions: Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NG-K 	**NG2M300LK**	2	.118	3,00	.110	2,79		●			
	NG2125LK	2	.125	3,18	.110	2,79	●	●	●	●	
	NG3047LK	3	.047	1,19	.075	1,91		●	●		
	NG3M150LK	3	.059	1,50	.094	2,39		●			
	NG3062LK	3	.062	1,58	.094	2,39		●	●	●	
	NG3072LK	3	.072	1,83	.094	2,39	●	●	●		
	NG3078LK	3	.078	1,98	.094	2,39		●		●	
	NG3M200LK	3	.079	2,00	.094	2,39		●			
	NG3M220LK	3	.087	2,20	.094	2,39		●			
	NG3M225LK	3	.088	2,25	.094	2,39		●			
	NG3094LK	3	.094	2,39	.150	3,81	●	●	●	●	
	NG3M250LK	3	.098	2,50	.150	3,81		●			
	NG3M275LK	3	.108	2,75	.150	3,81		●			
	NG3M300LK	3	.118	3,00	.150	3,81		●	●		
	NG3125LK	3	.125	3,18	.150	3,81	●	●	●	●	●
	NG3M325LK	3	.128	3,25	.150	3,81		●			
	NG3M350LK	3	.138	3,50	.150	3,81		●			
	NG3156LK	3	.156	3,96	.150	3,81		●	●	●	
	NG3M400LK	3	.158	4,00	.150	3,81		●			
	NG3189LK	3	.189	4,80	.150	3,81		●	●	●	
	NG4125LK	4	.125	3,18	.150	3,81		●	●		
	NG4189LK	4	.189	4,80	.250	6,35		●	●	●	
	NG4M500LK	4	.197	5,00	.250	6,35		●			
	NG4250LK	4	.250	6,35	.250	6,35	●	●	●	●	●
NG-1L 	**Left hand**										
	NG1031L	1	.031	0,79	.050	1,27		●			
	NG1047L	1	.047	1,19	.075	1,91	●	●			
	NG1062L	1	.062	1,58	.075	1,91	●	●			
	NG1094L	1	.094	2,39	.075	1,91	●	●			
NG 	**Right hand**										
	NG2031R	2	.031	0,79	.050	1,27		●	●		
	NG2041R	2	.041	1,04	.050	1,27		●			
	NG2047R	2	.047	1,19	.050	1,27		●	●		
	NG2062R	2	.062	1,58	.110	2,79		●	●		
	NG2094R	2	.094	2,39	.110	2,79		●	●		
	NG2125R	2	.125	3,18	.110	2,79		●			
	NG3047R	3	.047	1,19	.075	1,91		●	●		
	NG3062R	3	.062	1,58	.094	2,39		●	●	●	
	NG3072R	3	.072	1,83	.094	2,39		●			
	NG3078R	3	.078	1,98	.094	2,39		●	●		
	NG3088R	3	.088	2,24	.094	2,39		●	●		
	NG3094R	3	.094	2,39	.150	3,81	●	●	●	●	●
	NG3097R	3	.097	2,46	.150	3,81		●	●		
	NG3105R	3	.105	2,67	.150	3,81		●	●		
	NG3110R	3	.110	2,79	.150	3,81			●		●
	NG3122R	3	.122	3,10	.150	3,81			●		
	NG3125R	3	.125	3,18	.150	3,81	●	●	●	●	●
	NG3142R	3	.142	3,61	.150	3,81		●	●		
	NG3156R	3	.156	3,96	.150	3,81		●	●		●
	NG3178R	3	.178	4,52	.150	3,81			●		
	NG3185R	3	.185	4,70	.150	3,81		●			
	NG3189R	3	.189	4,80	.150	3,81		●	●	●	●
	NG4125R	4	.125	3,18	.150	3,81		●	●		
	NG4189R	4	.189	4,80	.250	6,35		●	●		
	NG4213R	4	.213	5,41	.250	6,35					●
	NG4250R	4	.250	6,35	.250	6,35		●	●		●

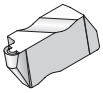
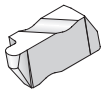
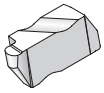
Order example:
Catalog number: **NG2125LK**
Insert grade: **KC720**

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Grooving Width W mm	Grooving Depth T inch	Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NG	**Left hand**										
	NG2031L	2	.031	0,79	.050	1,27		●	●		
	NG2041L	2	.041	1,04	.050	1,27		●	●		
	NG2047L	2	.047	1,19	.050	1,27		●	●		
	NG2058L	2	.058	1,47	.050	1,27		●			
	NG2062L	2	.062	1,58	.110	2,79	●	●	●		
	NG2094L	2	.094	2,39	.110	2,79		●	●		
	NG2125L	2	.125	3,18	.110	2,79		●	●		
	NG3047L	3	.047	1,19	.075	1,91		●	●		
	NG3062L	3	.062	1,58	.094	2,39		●	●	●	●
	NG3088L	3	.088	2,24	.094	2,39		●	●		
	NG3094L	3	.094	2,39	.150	3,81	●	●	●	●	●
	NG3097L	3	.097	2,46	.150	3,81		●			
	NG3105L	3	.105	2,67	.150	3,81		●	●		●
	NG3122L	3	.122	3,10	.150	3,81		●			
	NG3125L	3	.125	3,18	.150	3,81		●	●	●	
	NG3142L	3	.142	3,61	.150	3,81		●			
	NG3156L	3	.156	3,96	.150	3,81			●		
	NG3185L	3	.185	4,70	.150	3,81		●			
	NG3189L	3	.189	4,80	.150	3,81		●	●	●	
	NG4125L	4	.125	3,18	.150	3,81		●	●		
	NG4189L	4	.189	4,80	.250	6,35		●	●		
	NG4250L	4	.250	6,35	.250	6,35		●	●		●
NGP	**Right hand**										
	NGP2031R	2	.031	0,79	.050	1,27		●			
	NGP2062R	2	.062	1,58	.110	2,79		●	●		
	NGP3088R	3	.088	2,24	.094	2,39		●			
	NGP3125R	3	.125	3,18	.150	3,81		●	●		
	NGP3189R	3	.189	4,80	.150	3,81			●		
	NGP4189R	4	.189	4,80	.250	6,35		●			
	NGP4250R	4	.250	6,35	.250	6,35			●		
	Left hand										
	NGP3125L	3	.125	3,18	.150	3,81		●	●		
	NGP3156L	3	.156	3,96	.150	3,81		●			
	NGP3189L	3	.189	4,80	.150	3,81			●		
NGD-K	**Right hand**										
	NGD3062RK	3	.062	1,58	.125	3,18		●	●	●	
	NGD3094RK	3	.094	2,39	.250	6,35		●	●	●	
	NGD3125RK	3	.125	3,18	.250	6,35		●	●	●	
	NGD3189RK	3	.189	4,80	.250	6,35		●	●	●	
	NGD4125RK	4	.125	3,18	.250	6,35		●	●	●	
	NGD4189RK	4	.189	4,80	.375	9,53		●	●	●	
	NGD4250RK	4	.250	6,35	.500	12,70		●	●	●	
	Left hand										
	NGD3062LK	3	.062	1,58	.125	3,18		●			
	NGD3094LK	3	.094	2,39	.250	6,35		●	●	●	
	NGD3125LK	3	.125	3,18	.250	6,35		●	●	●	
	NGD3189LK	3	.189	4,80	.250	6,35		●	●	●	
	NGD4125LK	4	.125	3,18	.250	6,35		●	●	●	
	NGD4189LK	4	.189	4,80	.375	9,53		●	●	●	
	NGD4250LK	4	.250	6,35	.500	12,70		●	●	●	

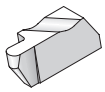
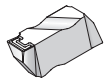
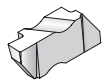
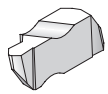
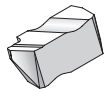
Order example:
Catalog number: NG2031L
Insert grade: KC730

TOP NOTCH Grooving Inserts

Grade Selection and Dimensions

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Grooving Width W mm	Grooving Depth T inch	Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NR-K	**Right hand**										
	**NR3047RK**	3	.094	2,39	.150	3,81		●	●	●	
	NR3078RK	3	.156	3,96	.150	3,81		●		●	
	NR3062RK	3	.125	3,18	.150	3,81		●	●	●	
	NR4094RK	4	.188	4,78	.250	6,35		●			
	NR4125RK	4	.250	6,35	.250	6,35		●			
	Left hand										
	NR3047LK	3	.094	2,39	.150	3,81		●	●	●	
	NR3062LK	3	.125	3,18	.150	3,81		●	●	●	
	NR4094LK	4	.188	4,78	.250	6,35				●	
	NR4125LK	4	.250	6,35	.250	6,35				●	
NR	**Right hand**										
	**NR2031R**	2	.062	1,58	.110	2,79		●	●		
	NR2047R	2	.094	2,39	.110	2,79		●			
	NR2062R	2	.125	3,18	.110	2,79		●	●		
	NR3031R	3	.062	1,58	.094	2,39		●	●		●
	NR3047R	3	.094	2,39	.150	3,81		●	●		
	NR3062R	3	.125	3,18	.150	3,81		●	●		●
	NR3078R	3	.156	3,96	.150	3,81		●	●		●
	NR3094R	3	.188	4,78	.150	3,81		●	●		●
	NR4062R	4	.125	3,18	.150	3,81		●	●		
	NR4094R	4	.188	4,78	.250	6,35		●	●		
	NR4125R	4	.250	6,35	.250	6,35		●	●		
	Left hand										
	NR2031L	2	.062	1,58	.110	2,79		●	●		
	NR2047L	2	.094	2,39	.110	2,79		●			
	NR2062L	2	.125	3,18	.110	2,79		●			
	NR3031L	3	.062	1,58	.094	2,39		●	●		●
	NR3047L	3	.094	2,39	.150	3,81		●	●		
	NR3062L	3	.125	3,18	.150	3,81		●	●		
	NR3078L	3	.156	3,96	.150	3,81		●			
	NR3094L	3	.188	4,78	.150	3,81		●	●		
	NR4062L	4	.125	3,18	.150	3,81		●	●		
	NR4094L	4	.188	4,78	.250	6,35		●	●		
	NR4125L	4	.250	6,35	.250	6,35		●	●		
NRP	**Right hand**										
	**NRP3031R**	3	.062	1,58	.094	2,39		●	●		
	NRP3047R	3	.094	2,39	.150	3,81		●	●		
	NRP3062R	3	.125	3,18	.150	3,81		●	●		
	NRP3094R	3	.188	4,78	.150	3,81		●			
	NRP4094R	4	.188	4,78	.250	6,35		●			
	NRP4125R	4	.250	6,35	.250	6,35		●	●		
	Left hand										
	NRP3031L	3	.062	1,58	.094	2,39		●	●		
	NRP3047L	3	.094	2,39	.150	3,81		●			
	NRP3062L	3	.125	3,18	.150	3,81		●	●		
	NRP3094L	3	.188	4,78	.150	3,81		●	●		

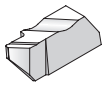
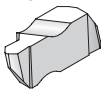
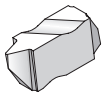
Order example:
Catalog number: **NR3047RK**
Insert grade: **KC730**

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Grooving Width W mm	Grooving Depth T inch	Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NRD 	**Right hand**										
	NRD3031R	3	.062	1,58	.125	3,18		●	●		
	NRD3062R	3	.125	3,18	.250	6,35		●	●		
	NRD4062R	4	.125	3,18	.250	6,35		●	●		
	NRD4094R	4	.188	4,78	.500	12,70		●			
	NRD4125R	4	.250	6,35	.500	12,70		●			
	Left hand										
	NRD3031L	3	.062	1,58	.125	3,18		●	●		
	NRD3062L	3	.125	3,18	.250	6,35		●	●		
	NRD4062L	4	.125	3,18	.250	6,35		●			
	NRD4094L	4	.188	4,78	.500	12,70		●	●		
	NRD4125L	4	.250	6,35	.500	12,70		●	●		
NF-K 	**Right hand**										
	NF3125RK	3	.125	3,18	.150	3,81	●		●		
	NF4250RK	4	.250	6,35	.250	6,35	●		●		
	Left hand										
	NF3125LK	3	.125	3,18	.150	3,81	●		●		
	NF4189LK	4	.189	4,80	.250	6,35	●		●		
	NF4250LK	4	.250	6,35	.250	6,35	●		●		
NF 	**Right hand**										
	NF3125R	3	.125	3,18	.150	3,81		●	●		●
	Left hand										
	NF3125L	3	.125	3,18	.150	3,81		●			●
NFD-K	**Right hand**										
	NFD3125RK	3	.125	3,18	.250	6,35		●	●		
	NFD4189RK	4	.189	4,80	.375	9,53		●	●		
	NFD4250RK	4	.250	6,35	.500	12,70		●	●		
	Left hand										
	NFD3125LK	3	.125	3,18	.250	6,35		●	●		
	NFD4189LK	4	.189	4,80	.375	9,53		●	●		
	NFD4250LK	4	.250	6,35	.500	12,70		●	●		
NFD-KI 	**Right hand**										
	NFD3125RKI	3	.125	3,18	.250	6,35		●			
	NFD3156RKI	3	.156	3,96	.250	6,35	●				
NP-K 	**Right hand**										
	NP2012RK	2	.145	3,68	.110	2,79		●			
	NP2002RK	2	.145	3,68	.110	2,79		●		●	
	NP3012RK	3	.190	4,83	.200	5,08		●			
	NP3002RK	3	.190	4,83	.200	5,08		●		●	
	NP3014RK	3	.124	3,15	.250	6,35		●	●		
	NP3001RK	3	.124	3,15	.250	6,35		●	●		

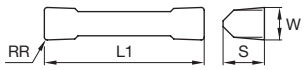
Order example:
Catalog number: NRD3031R
Insert grade: KC730

TOP NOTCH Grooving Inserts

Grade Selection and Dimensions

	Catalog number	Insert Size	Dimensions: Grooving Width W inch	Grooving Width W mm	Grooving Depth T inch	Grooving Depth T mm	KC720	KC730	KC850	KC935	KC950
NPD-K 	**Right hand**										
	NPD2002RK	2	.145	3,68	.200	5,08		●			
	NPD3012RK	3	.190	4,83	.250	6,35		●		●	
	NPD3002RK	3	.190	4,83	.250	6,35		●			
NU 	**Left hand**										
	NU3094L	3	.094	2,39	.125	3,18		●			
NV 	**Right hand**										
	NV3RJ	3	-	-	.087	2,21		●			
	NV4RL	4	-	-	.201	5,11		●			

Order example:
Catalog number: **NPD2002RK**
Insert grade: **KC730**



	Catalog number	Dimensions W inch	W mm	RR inch	RR mm	LI	S	K68	KC730	KC850	KC935	KC950	KD120	KD100
GC	GC4125	.125	3,18	.0125	0,32	1.000	.188	●	●	●	●	●	●	●
	GC4187	.187	4,75	.0125	0,32	1.000	.328	●	●	●		●		●
	GC4250	.250	6,35	.0125	0,32	1.000	.328	●	●	●	●	●		
	GC4312	.312	7,93	.0125	0,32	1.000	.328	●						
	GC4375	.375	9,53	.0125	0,32	1.000	.328	●		●		●		
	GC6187	.187	4,75	.0125	0,32	1.500	.328	●		●				
	GC6250	.250	6,35	.0125	0,32	1.500	.328			●				
	GC6375	.375	9,53	.0125	0,32	1.500	.328			●				
	GC9125A	.125	3,18	.0125	0,32	1.125	.250		●			●		
	GC9187A	.187	4,75	.0125	0,32	1.125	.250		●			●		
	GC9250A	.250	6,35	.0125	0,32	1.125	.250		●					
	GC9250B	.250	6,35	.0125	0,32	1.125	.337		●					
GC-K	GC4125K	.125	3,18	.0125	0,32	1.000	.188		●	●	●			
	GC4187K	.187	4,75	.0125	0,32	1.000	.328		●	●	●			
	GC4250K	.250	6,35	.0125	0,32	1.000	.328		●	●	●			
	GC4375K	.375	9,53	.0125	0,32	1.000	.328			●	●			
GCP	GCP4125	.125	3,18	.0125	0,32	1.000	.188		●			●		
	GCP4187	.187	4,75	.0125	0,32	1.000	.328		●					
	GCP4250	.250	6,35	.0125	0,32	1.000	.328					●		
GR	GR4125	.125	3,18	.0625	1,59	1.000	.188		●			●		
	GR4187	.187	4,75	.0940	2,39	1.000	.328		●			●		
	GR4250	.250	6,35	.1250	3,18	1.000	.328		●			●		
	GR9125A	.125	3,18	.0625	1,59	1.125	.250		●					
	GR9187A	.187	4,75	.0940	2,39	1.125	.250		●					
	GR9250B	.250	6,35	.1250	3,18	1.125	.337		●					
GRP	GRP4125	.125	3,18	.0625	1,59	1.000	.188		●					
	GRP4187	.187	4,75	.0940	2,39	1.000	.328		●					
	GRP4250	.250	6,35	.1250	3,18	1.000	.328		●					

Order example:
Catalog number: GC4125
Insert grade: K68

NOTE: See the full selection of KENDEX Deep Grooving Toolholders at www.kennametal.com

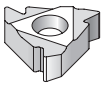
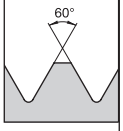
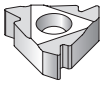
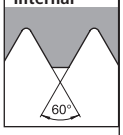
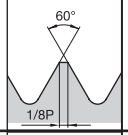
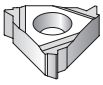
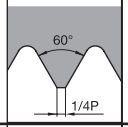
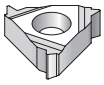
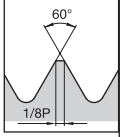
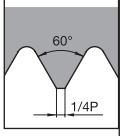
SEPARATOR Cut-Off Inserts

Grade Selection and Dimensions

	Catalog number	Dimensions W inch	Dimensions W mm	Dimensions RR inch	Dimensions RR mm	Dimensions α	KC720	KC722	KC935
GS-N	**GS094N**	.094	2,39	.0025	0,06	-	●	●	●
	GS125N	.125	3,18	.0025	0,06	-	●	●	●
	GS160N	.160	4,06	.0025	0,06	-		●	●
	GS188N	.188	4,78	.0025	0,06	-	●	●	●
	GS250N	.250	6,35	.0025	0,06	-	●		
GS-R	**Right hand**								
	GS094R	.094	2,39	.0025	0,06	4	●	●	●
	GS094R12	.093	2,36	.0015	0,04	12		●	●
	GS094R18	.092	2,34	.0015	0,04	18		●	
	GS125R	.125	3,18	.0025	0,06	4	●	●	●
	GS125R12	.125	3,18	.0015	0,04	12	●	●	
	GS125R18	.124	3,15	.0015	0,04	18		●	
	GS160R	.159	4,05	.0025	0,06	4		●	●
	GS188R	.187	4,75	.0025	0,06	4	●	●	●
GS-L	**Left hand**								
	GS094L	.094	2,39	.0025	0,06	4	●	●	●
	GS125L	.125	3,18	.0025	0,06	4	●	●	●
	GS125L12	.125	3,18	.0015	0,04	12		●	
	GS188L	.187	4,75	.0025	0,06	4	●		

Order example:
Catalog number: **GS094N**
Insert grade: **KC720**

NOTE: See full selection of Separator toolholders at www.kennametal.com

		Insert size	Catalog number Right hand	Pitch mm	Pitch TPI	Pitch TPF	Nose Radius inch	Nose Radius mm	KC730
LT-ER/L-60 	Partial Profile 60° External 	16	LT16ERA60	0,50 - 1,5	48 - 16	-	.002	0,05	●
		16	LT16ERAG60	0,50 - 3,0	48 - 8	-	.003	0,08	●
LT-NR/L-60 	Partial Profile 60° Internal 	11	LT11NRA60	0,50 - 1,5	48 - 16	-	.002	0,05	●
		16	LT16NRAG60	0,50 - 3,0	48 - 8	-	.002	0,05	●
		16	LT16NRG60	1,75 - 3,0	14 - 8	-	.006	0,15	●
		22	LT22NRN60	3,50 - 5,0	7 - 5	-	.012	0,31	●
LT-ER/L-ISO	ISO Metric- External 	16	LT16ER15ISO	1,5	-	-	-	-	●
		16	LT16ER20ISO	2,0	-	-	-	-	●
		16	LT16ER25ISO	2,5	-	-	-	-	●
		16	LT16ER30ISO	3,0	-	-	-	-	●
		22	LT22ER40ISO	4,0	-	-	-	-	
LT-NR/L-ISO 	ISO Metric- Internal 	16	LT16NR15ISO	1,5	-	-	-	-	●
		16	LT16NR20ISO	2,0	-	-	-	-	●
LT-ER/L-UN 	American UN- External 	16	LT16ER20UN	-	20	-	-	-	●
		16	LT16ER18UN	-	18	-	-	-	●
		16	LT16ER16UN	-	16	-	-	-	●
		16	LT16ER14UN	-	14	-	-	-	●
		16	LT16ER12UN	-	12	-	-	-	●
		16	LT16ER8UN	-	8	-	-	-	●
LT-NR/L-UN	American UN- Internal 	16	LT16NR14UN	-	14	-	-	-	●
		16	LT16NR12UN	-	12	-	-	-	●

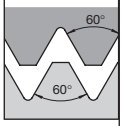
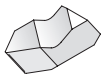
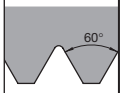
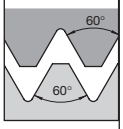
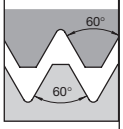
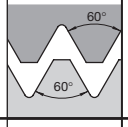
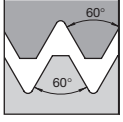
Order example:
Catalog number: LT16ERA60
Insert grade: KC730

LT Threading Inserts

Grade Selection and Dimensions

		Insert size	Catalog number Right hand	Pitch mm	TPI	TPF	Nose Radius inch	Nose Radius mm	KC730
LT-ER/L-NPT	NPT External	16	LT16ER14NPT	-	14	.750	-	-	●
LT-NR/L-NPT	NPT Internal	16	LT16NR14NPT	-	14	.750	-	-	●

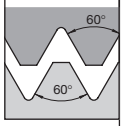
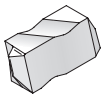
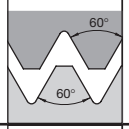
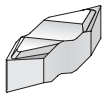
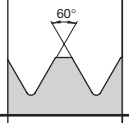
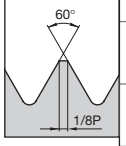
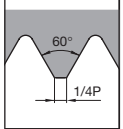
Order example:
Catalog number: **LT16ER14NPT**
Insert grade: **KC730**

		Catalog number	Dimensions: Insert size	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	Nose radius inch	Nose radius mm	K313	KC720	KC730	KC850	KC950
NT-K	**Partial Profile 60°** 	**Right hand**												
		NT2RK	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●		
		NT3RK	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17		●	●	●	
		NT4RK	4	1,25 - 6,25	2,00 - 6,25	4.0 - 20.0	4.0 - 12.0	.007	0,17			●	●	
		Left hand												
		NT2LK	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●		
		NT3LK	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17			●	●	
NT-1L 	**Partial Profile 60° Internal** 	**Left hand**												
		NT1L	1	-	1,00 - 2,00	-	12.0 - 24.0	.003	0,08			●		
NT	**Partial Profile 60°** 	**Right hand**												
		NT2R	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●	●	
		NT3R	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17			●	●	●
		NT4R	4	1,25 - 6,25	2,00 - 6,25	4.0 - 20.0	4.0 - 12.0	.007	0,17			●	●	
		Left hand												
		NT2L	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●	●	
		NT3L	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17			●	●	●
		NT4L	4	1,25 - 6,25	2,00 - 6,25	4.0 - 20.0	4.0 - 12.0	.007	0,17			●	●	●
NTP	**Partial Profile 60°** 	**Right hand**												
		NTP2R	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●	●	
		NTP3R	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17	●		●	●	●
		NTP4R	4	1,25 - 6,25	2,00 - 6,25	4.0 - 20.0	4.0 - 12.0	.007	0,17			●	●	
		Left hand												
		NTP2L	2	0,70 - 3,00	1,25 - 3,50	8.0 - 36.0	7.0 - 20.0	.004	0,10			●	●	
		NTP3L	3	1,25 - 4,00	2,00 - 5,00	6.0 - 20.0	5.0 - 12.0	.007	0,17			●	●	
		NTP4L	4	1,25 - 6,25	2,00 - 6,25	4.0 - 20.0	4.0 - 12.0	.007	0,17			●	●	
NT-CK	**Partial Profile 60°** 	**Right hand**												
		NT3RCK	3	2,50 - 4,00	4,00	6.0 - 11.0	6.0	.014	0,34			●	●	
NT-C	**Partial Profile 60°** 	**Right hand**												
		NT3RC	3	2,50 - 4,00	4,00	6.0 - 11.0	6.0	.014	0,34			●		
		NT4RC	4	2,50 - 5,50	4,00 - 5,50	4.5 - 11.0	4.5 - 6.0	.014	0,34				●	
		Left hand												
		NT4LC	4	2,50 - 5,50	4,00 - 5,50	4.5 - 11.0	4.5 - 6.0	.014	0,34		●			

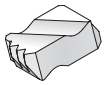
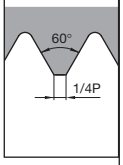
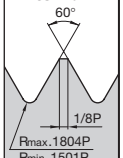
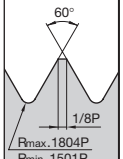
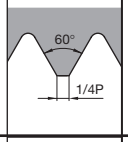
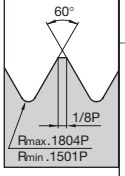
Order example:
Catalog number: **NT2RK**
Insert grade: **KC730**

TOP NOTCH Threading Inserts

Grade Selection and Dimensions

		Catalog number	Insert size	Dimensions: Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	Nose radius inch	Nose radius mm	K313	KC720	KC730	KC850	KC950
NTF	Partial Profile 60°	**Right hand**												
		NTF2R	2	0,60 - 1,75	1,00 - 2,00	14.0 - 44.0	12.0 - 24.0	.003	0,08			●	●	
		NTF3R	3	0,60 - 2,50	1,00 - 2,50	10.0 - 44.0	9.0 - 24.0	.003	0,08			●	●	●
		NTF4R	4	0,60 - 2,50	1,00 - 2,50	10.0 - 44.0	9.0 - 24.0	.003	0,08				●	
		Left hand												
		NTF2L	2	0,60 - 1,75	1,00 - 2,00	14.0 - 44.0	12.0 - 24.0	.003	0,08			●	●	
		NTF3L	3	0,60 - 2,50	1,00 - 2,50	10.0 - 44.0	9.0 - 24.0	.003	0,08			●	●	
NTK	Partial Profile 60°	**Right hand**												
		NTK2R	2	0,60 - 1,75	1,00 - 2,00	14.0 - 44.0	12.0 - 24.0	.003	0,08			●	●	
		NTK3R	3	0,60 - 2,50	1,00 - 2,50	10.0 - 44.0	9.0 - 24.0	.003	0,08			●	●	
		Left hand												
		NTK2L	2	0,60 - 1,75	1,00 - 2,00	14.0 - 44.0	12.0 - 24.0	.003	0,08			●	●	
		NTK3L	3	0,60 - 2,50	1,00 - 2,50	10.0 - 44.0	9.0 - 24.0	.003	0,08			●	●	
NTU	Partial Profile 60° External	**Right hand**												
		NTU4R	4	1,25 - 6,25	-	4.0 - 20.0	-	.005	0,11				●	
NTC-E	American UN - External	**Right hand**												
		NTC3R8E	3	-	-	8.0	-	.016	0,41			●	●	
		NTC3R10E	3	-	-	10.0	-	.012	0,32			●		
		NTC3R12E	3	-	-	12.0	-	.010	0,25			●	●	
		NTC3R13E	3	-	-	13.0	-	.010	0,24			●		
		NTC3R14E	3	-	-	14.0	-	.009	0,22			●		
		NTC3R16E	3	-	-	16.0	-	.008	0,19			●	●	●
		NTC3R18E	3	-	-	18.0	-	.007	0,18			●	●	
		NTC3R20E	3	-	-	20.0	-	.006	0,16			●		
		NTC3R24E	3	-	-	24.0	-	.005	0,13			●		
		NTC3R28E	3	-	-	28.0	-	.005	0,12			●		
		NTC3R32E	3	-	-	32.0	-	.004	0,10			●		
		Left hand												
		NTC3L8E	3	-	-	8.0	-	.016	0,41			●		
NTC-I	American UN - Internal	**Left hand**												
		NTC3L8I	3	-	-	-	8.0	.007	0,18			●		
		NTC3L10I	3	-	-	-	10.0	.005	0,13			●		
		NTC3L12I	3	-	-	-	12.0	.004	0,10			●		

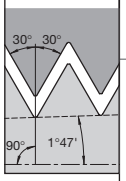
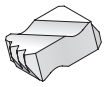
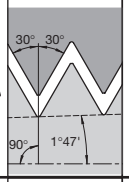
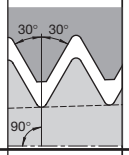
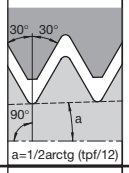
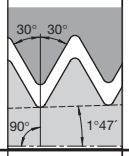
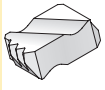
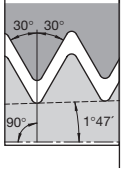
Order example:
Catalog number: NTF2R
Insert grade: KC730

		Catalog number	Dimensions							K313	KC720	KC730	KC850	KC950
			Insert size	Pitch (mm) external	Pitch (mm) internal	TPI external	TPI internal	Nose radius inch	Nose radius mm					
NTC-IM (MULTI-TOOTH)	**American UN - Internal**	**Left hand**												
		**NTC8L12IM**	8	-	-	-	12.0	.005	0,13			●		
NJ	**UNJ External**	**Right hand**												
		**NJ3020R8**	3	-	-	8.0	-	.019	0,49			●		
		NJ3014R12	3	-	-	12.0	-	.013	0,33			●	●	
		Left hand												
		NJ3014L12	3	-	-	12.0	-	.013	0,33				●	
NJP	**UNJ External**	**Right hand**												
		**NJP3020R8**	3	-	-	8.0	-	.019	0,49				●	
		NJP3014R12	3	-	-	12.0	-	.013	0,33			●	●	
		NJP3010R16	3	-	-	16.0	-	.010	0,25			●		
		Left hand												
		NJP3014L12	3	-	-	12.0	-	.013	0,33			●		
		NJP3010L16	3	-	-	16.0	-	.010	0,25				●	
NJF	**UNJ External**	**Right hand**												
		**NJF3010R16**	3	-	-	16.0	-	.010	0,25			●		
		NJF3009R18	3	-	-	18.0	-	.009	0,22			●		
		NJF3008R20	3	-	-	20.0	-	.008	0,20			●		
NJK	**UNJ External**	**Right hand**												
		**NJK3005R32**	3	-	-	32.0	-	.005	0,13			●		
		NJK3006R28	3	-	-	28.0	-	.006	0,15			●		
		NJK3007R24	3	-	-	24.0	-	.007	0,17			●		
		NJK3008R20	3	-	-	20.0	-	.008	0,20			●		
		NJK3009R18	3	-	-	18.0	-	.009	0,22			●		
		NJK3010R16	3	-	-	16.0	-	.010	0,25			●		
		Left hand												
		NJK3008L20	3	-	-	20.0	-	.008	0,20			●		

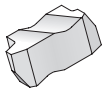
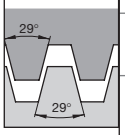
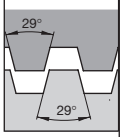
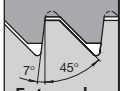
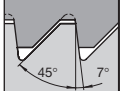
Order example:
Catalog number: **NTC8L12IM**
Insert grade: **KC730**

TOP NOTCH Threading Inserts

Grade Selection and Dimensions

		Catalog number	Dimensions: Insert size	TPI	TPF	Nose radius: inch	Nose radius: mm	K313	KC720	KC730	KC850	KC950
NDC-V	**NPT**	**Right hand**										
		**NDC38VR75**	3	8.0	.750	.005	0,13			●		
		NDC3115VR75	3	11.5	.750	.004	0,10			●		
		NDC314VR75	3	14.0	.750	.003	0,08			●		
		NDC318VR75	3	18.0	.750	.003	0,08			●		
		Left hand										
		NDC38VL75	3	8.0	.750	.005	0,13			●		
		NDC3115VL75	3	11.5	.750	.004	0,10			●		
NDC-V-M (MULTI-TOOTH)	**NPT**	**Right hand**										
		**NDC88VR75M**	8	8.0	.750	.005	0,13			●		
		NDC8115VR75M	8	11.5	.750	.004	0,10			●		
ND (Partial Profile)	**API Rotary Shoulder Connections**	**Right hand**										
		**ND3040R**	3	5.0	-	.018	0,45				●	
		ND4040R	4	5.0	-	.018	0,45			●		
		ND4050R	4	4.0	-	.023	0,57				●	
		Left hand										
		ND3040L	3	5.0	-	.018	0,45				●	
NDC (Cresting)	**API Rotary Shoulder Connections**	**Right hand**										
		**NDC4038R2**	4	4.0	2.0	.036	0,90			●		
		NDC4050R2	4	4.0	2.0	.023	0,57			●		
		Left hand										
		NDC4038L2	4	4.0	2.0	.036	0,90			●		
		NDC4050L2	4	4.0	2.0	.023	0,57			●		
NDC-RD	**API Round**	**Right hand**										
		**NDC38RDR75**	3	8.0	.750	.017	0,43			●	●	
		NDC310RDR75	3	10.0	.750	.014	0,36				●	
		Left hand										
		NDC38RDL75	3	8.0	.750	.017	0,43			●	●	
		NDC310RDL75	3	10.0	.750	.014	0,36			●	●	
NDC-RD-M (MULTI-TOOTH)	**API Round**	**Right hand**										
		**NDC88RDR75M**	8	8.0	.750	.016	0,41			●		

Order example:
Catalog number: **NDC38VR75**
Insert grade: **KC730**

		Catalog number	Dimensions: Insert size	TPI	TPF	Nose radius: inch	Nose radius: mm	K313	KC720	KC730	KC850	KC950
NA	**Acme**	**Right hand**										
		**NA3R4**	3	4.0	-	-	-			●	●	
		NA3R5	3	5.0	-	-	-				●	
		NA3R6	3	6.0	-	-	-				●	
		NA3R8	3	8.0	-	-	-			●	●	
		NA3R10	3	10.0	-	-	-				●	
		NA3R12	3	12.0	-	-	-				●	
		NA4R4	4	4.0	-	-	-			●	●	
		NA4R5	4	5.0	-	-	-				●	
		NA4R6	4	6.0	-	-	-				●	
		NA6R2	6	2.0	-	-	-			●		
		NA6R3	6	3.0	-	-	-			●		
		Left hand										
		NA3L4	3	4.0	-	-	-			●	●	
		NA3L5	3	5.0	-	-	-				●	
		NA3L6	3	6.0	-	-	-			●	●	
		NA3L8	3	8.0	-	-	-				●	
		NA4L4	4	4.0	-	-	-			●	●	
		NA4L6	4	6.0	-	-	-				●	
		NA6L2	6	2.0	-	-	-			●		
NAS	**Stub Acme**	**Right hand**										
		**NAS3R6**	3	6.0	-	-	-			●		
		NAS3R8	3	8.0	-	-	-			●	●	
		NAS3R12	3	12.0	-	-	-			●		
		Left hand										
		NAS3L6	3	6.0	-	-	-			●		
		NAS3L8	3	8.0	-	-	-			●	●	
		NAS3L12	3	12.0	-	-	-			●		
NTB-A	**American Buttress Push**	**Right hand**										
	Internal	**NTB3RA**	3	8.0 - 16.0	-	.007	0,17			●		
		**Left hand**										
		NTB3LA	3	8.0 - 16.0	-	.007	0,17			●		
	External											
NTB-B	**American Buttress Pull**	**Right hand**										
	Internal	**NTB2RB**	2	16.0 - 20.0	-	.003	0,08			●		
		NTB3RB	3	8.0 - 16.0	-	.007	0,17			●		
		**NTB4RB**	4	4.0 - 6.0	-	.010	0,25			●		
		Left hand										
		NTB2LB	2	16.0 - 20.0	-	.003	0,08			●		
		NTB3LB	3	8.0 - 16.0	-	.007	0,17			●		
	External	**NTB4LB**	4	4.0 - 6.0	-	.010	0,25			●		

Order example:
Catalog number: **NA3R4**
Insert grade: **KC730**

Universal Bit Holder

Catalog number	
DRIVER	

Bits

Catalog number	Bit Length (mm)	⬡ Hex Size	✡ Torx Size	✡ Torx Plus Size
170.179	25,0	2,5		
170.180	25,0	3,0		
170.181	25,0	4,0		
BT6	25,0		6	
BT7	25,0		7	
BT8	25,0		8	
BT9	25,0		9	
BT10	25,0		10	
170.175	29,0		15	
170.177	70,0		15	
170.176	30,0		20	
170.258	25,0		25	
170.259	65,0		25	
170.256	25,0		27	
170.257	65,0		27	
BT25IP	25,0			25 IP
BTE25IP	50,8			25 IP
BT27IP	25,0			27 IP
BTE27IP	50,8			27 IP

Screw Driver

Catalog number	Packages	⬡ Hex Size	✡ Torx Size	✡ Torx Plus Size
DT6			T6	
DT7			T7	
DT8			T8	
DT9			T9	
DT10			T10	
DT15			T15	
DT20			T20	
	TWS1		T6 - T15	
DT8IP				8 IP
DT9IP				9 IP
DT10IP				10 IP
DT15IP				15 IP
DT20IP				20 IP
DT25IP				25 IP
DT27IP				27 IP
DT30IP				30 IP
DT40IP				40 IP

Flag-Type Screw Driver

Catalog number	⬡ Hex Size	✡ Torx Size	✡ Torx Plus Size
FT5		T5	
FT6		T6	
FT8		T8	
FT9		T9	
FT10		T10	
FT1015		T10/T15	
FT15		T15	
FT1535	3,5	T15	
FT154	4,0	T15	
FT20		T20	
FT205	5,0	T20	

Allen Key

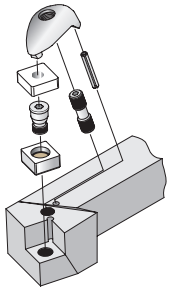
Catalog number	Packages	Hex Size	Torx Size	Torx Plus Size
170.000		1,5		
170.001		2,0		
170.002		2,5		
170.003		3,0		
170.004		4,0		
170.005		5,0		
170.006		6,0		
170.008		8,0		
170.009		9,0		
170.010		10,0		
170.011		12,0		
	MW9	1,27 - 8,0		
KT5			T5	
KT6			T6	
KT7			T7	
KT8			T8	
KT9			T9	
KT10			T10	
KT15			T15	
KT15PKG			T15	
KT20			T20	
KT20PKG			T20	
KT25			T25	
KT25PKG			T25	
KT27			T27	
KT27PKG			T27	
KT30			T30	
KT45			T45	
	KT6PKG (5 pieces)		T6	
	KT7PKG (5 pieces)		T7	
	KT8PKG (5 pieces)		T8	
	KT9PKG (5 pieces)		T9	
K8IP				8 IP
K9IP				9 IP
K10IP				10 IP
K15IP				15 IP
K20IP				20 IP
K25IP				25 IP
K27IP				27 IP
K30IP				30 IP
K40IP				40 IP

T-Handle Screw Driver

Catalog number	Hex Size	Torx Size	Torx Plus Size
KW078	5/64		
KW093	3/32		
KW109	7/64		
KW125	1/8		
KW156	5/32		
KW187	3/16		
KW218	7/32		
TT10		T10	
TT15		T15	
TT20		T20	
TT25		T25	
TT30		T30	
TTP8			8 IP
TTP9			9 IP
TTP10			10 IP
TTP15			15 IP
TTP20			20 IP
TTP27			27 IP

Torque Recommendations

KENCLAMP



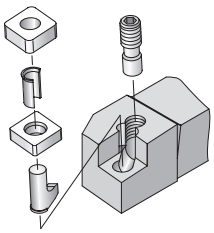
Shim Screw

Catalog number	Thread Size	Top Drive Torx plus	Bottom Drive	Recommended Torque Nm	in-lbs	ft-lbs
KMSP39IP	**M5 x 0,8**	9IP	-	6	53	4
KMSP415IP	**M6,3 x 1,0**	15IP	-	6	53	4
KMSP4S15IP	**M6,3 x 1,0**	15IP	-	6	53	4
KMSP515IP	**M8 x 1,0**	15IP	-	7	58	5
KMSP5S15IP	**M8 x 1,0**	15IP	-	7	58	5
KMSP625IP	**M10 x 1,0**	25IP	-	17	150	12
KMSP840IP	**M12 x 1,25**	40IP	-	33	292	24

Clamp Screw

Catalog number	Thread Size	Top Drive Torx plus	Bottom Drive Torx plus	Recommended Torque Nm	in-lbs	ft-lbs
STCM1115IP	**M6 x 1,0**	15IP	15IP	7	58	5
STCM119IP	**M6 x 1,0**	9IP	9IP	6	53	4
STCM1940IP	**M10 x 1,25**	40IP	40IP	33	292	24
STCM4127IP	**M8 x 1,0**	27IP	27IP	20	177	14
STCM425IP	**M8 x 1,0**	25IP	25IP	17	150	12
STCM825IP	**M8 x 1,0**	25IP	25IP	17	150	12

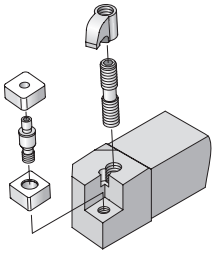
KENLEVER



Lever Screw

Catalog number	Thread Size	Top Drive Torx plus	Bottom Drive Torx plus	Recommended Torque Nm	in-lbs	ft-lbs
514.111	**M5 x 0,8**	8IP	-	2	18	1.5
514.112	**M5 x 0,8**	8IP	-	2	18	1.5
514.118	**M6 x 1,0**	10IP	10IP	4	35	3.0
514.122	**M6 x 1,0**	10IP	-	4	35	3.0
514.123	**M8 x 1,0**	15IP	15IP	7	58	5.0
514.124	**M8 x 1,0**	15IP	-	7	58	5.0
514.125	**M8 x 1,0**	15IP	-	7	58	5.0
514.128	**M8 x 1,0**	15IP	15IP	7	58	5.0
514.133	**M10 x 1,0**	25IP	25IP	12	106	9.0
514.138	**M10 x 1,0**	30IP	30IP	17	150	12.0

KENLOC



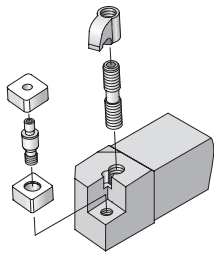
Lock Pin

Catalog number	Thread Size	Top Drive Hex (inch)	Bottom Drive Hex (inch)	Recommended Torque Nm	in-lbs	ft-lbs
KL23	**#8-32**	-	1/16	1,5	13	1.0
KL33	**#10-32**	5/64	5/64	1,7	15	1.2
KL33L	**#10-32**	5/64	5/64	1,7	15	1.2
KL34	**#10-32**	5/64	5/64	1,7	15	1.2
KL34L	**#10-32**	5/64	5/64	1,7	15	1.2
KL44	**1/4-28**	3/32	3/32	3,3	30	2.5
KL46	**1/4-28**	3/32	3/32	3,3	30	2.5
KL46L	**1/4-28**	3/32	3/32	3,3	30	2.5
KL57	**5/16-24**	1/8	1/8	5,5	50	4.0
KL58	**5/16-24**	1/8	1/8	5,5	50	4.0
KL58L	**5/16-24**	1/8	1/8	5,5	50	4.0
KL68	**3/8-24**	9/64	9/64	8,0	70	5.6
KL68L	**3/8-24**	9/64	9/64	8,0	70	5.6
KL810	**7/16-20**	5/32	5/32	9,0	80	6.4
KLC33	**M5 x 0,8**	5/64	5/64	1,7	15	1.2
KLC33L	**M5 x 0,8**	5/64	5/64	1,7	15	1.2
KLC34L	**M5 x 0,8**	5/64	5/64	1,7	15	1.2
KLC43	**M5 x 0,8**	5/64	5/64	1,7	15	1.2
KLC44	**M6,3 x 1**	3/32	3/32	3,3	30	2.5
KLC46	**M6,3 x 1**	3/32	3/32	3,3	30	2.5
KLC46L	**M6,3 x 1**	3/32	3/32	3,3	30	2.5
KLC46S	**M6,3 x 1**	3/32	3/32	3,3	30	2.5
KLC54	**M6,3 x 1**	3/32	3/32	3,3	30	2.5
KLC56	**M8 x 1**	1/8	1/8	5,5	50	4.0
KLC58	**M8 x 1**	1/8	1/8	5,5	50	4.0
KLC68	**M10 x 1**	9/64	9/64	8,0	70	5.6
KLC810	**M12 x 1,25**	5/32	5/32	9,0	80	6.4

Clamp Screw

Catalog number	Thread Size	Top Drive Hex (inch)	Bottom Drive Hex (inch)	Recommended Torque Nm	in-lbs	ft-lbs
STC2	5/16 - 24	5/32	5/32	10,8	96	8
STC3	1/2 - 20	1/4	1/4	40,3	357	30
STC4	5/16 - 24	5/32	5/32	10,8	96	8
STC5	10 - 32	3/32	3/32	2,3	21	1.6
STC8	5/16 - 24	5/32	5/32	10,8	96	8
STC9	10 - 32	3/32	3/32	2,3	21	1.6
STC11	1/4 - 28	1/8	1/8	5,4	48	4
STC12	1/4 - 28	1/8	1/8	5,4	48	4
STC19	3/8 - 24	3/16	3/16	18,8	167	13.9
STC20	1/4 - 28	1/8	1/8	5,4	48	4
STC25	10 - 32	3/32	3/32	2,3	21	1.6
STC26	1/4 - 28	1/8	1/8	5,4	48	4
STC27	8 - 36	5/64	5/64	1,4	12	1
STC30	6 - 40	1/16	1/16	0,7	6	.5
STC32	1/4 - 28	1/8	1/8	5,4	48	4
STC34	10 - 32	3/32	3/32	2,3	21	1.6
STC35	1/4 - 28	1/8	1/8	5,4	48	4
STC36	1/4 - 28	3/32	3/32	2,3	21	1.6
STCC-8	M8X1	9/64	9/64	11,8	105	8.8
STCC-9	M5x0,8	3/32	3/32	3,1	28	2.3
STCC-11	M6X1	1/8	1/8	5,1	45	3.8
STCC-20	M6x1	1/8	1/8	5,1	45	3.8
STCC-37	M8x1	3/32	3/32	11,8	105	8.8
STCC-38	M5x0,8	5/64	5/64	3,1	28	2.3
STCC-39	M10X1,25	1/8	1/8	35,0	206	25.9
STCC-40	M6x1	3/32	3/32	5,1	45	3.8

KENLOC



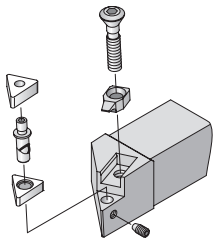
Lock Pin

Catalog number	Thread Size	Top Drive Hex (mm)	Bottom Drive Hex (mm)	Recommended Torque Nm	in-lbs	ft-lbs
KLM23	**M4 x 0,7**	-	1,5	1,5	13	1.0
KLM33	**M5 x 0,8**	2,0	2,0	1,7	15	1.2
KLM33L	**M5 x 0,8**	2,0	2,0	1,7	15	1.2
KLM34	**M5 x 0,8**	2,0	2,0	1,7	15	1.2
KLM34L	**M5 x 0,8**	2,0	2,0	1,7	15	1.2
KLM43	**M5 x 0,8**	2,0	2,0	1,7	15	1.2
KLM44	**M6,3 x 1**	2,5	2,5	3,3	30	2.5
KLM46	**M6,3 x 1**	2,5	2,5	3,3	30	2.5
KLM46L	**M6,3 x 1**	2,5	2,5	3,3	30	2.5
KLM46S	**M6,3 x 1**	2,5	2,5	3,3	30	2.5
KLM54	**M6,3 x 1**	2,5	2,5	3,3	30	2.5
KLM56	**M8 x 1**	3,0	3,0	5,5	50	4.0
KLM58	**M8 x 1**	3,0	3,0	5,5	50	4.0
KLM58L	**M8 x 1**	3,0	3,0	5,5	50	4.0
KLM66	**M10 x 1**	4,0	4,0	8,0	70	5.6
KLM66L	**M10 x 1**	4,0	4,0	8,0	70	5.6
KLM68	**M10 x 1**	4,0	4,0	8,0	70	5.6
KLM68L	**M10 x 1**	4,0	4,0	8,0	70	5.6
KLM810	**M12 x 1,25**	4,0	4,0	9,0	80	6.4

Clamp Screw

Catalog number	Thread Size	Top Drive Hex (mm)	Bottom Drive Hex (mm)	Recommended Torque Nm	in-lbs	ft-lbs
STCM4	**M8 x 1**	4,0	4,0	17,0	150	12.0
STCM5	**M5 x 0,8**	2,5	2,5	4,0	35	3.0
STCM8	**M8 x 1**	4,0	4,0	17,0	150	12.0
STCM9	**M5 x 0,8**	2,5	2,5	4,0	35	3.0
STCM11	**M6 x 1**	3,0	3,0	6,0	53	4.4
STCM19	**M10 x 1,25**	5,0	5,0	8,0	71	5.9
STCM20	**M6 x 1**	3,0	3,0	7,0	62	5.2
STCM24	**M10 x 1,25**	5,0	5,0	33,0	292	24.3
STCM25	**M5 x 0,8**	2,5	2,5	4,0	35	3.0
STCM26	**M6 x 1**	3,0	3,0	7,0	62	5.2
STCM27	**M4 x 0,7**	2,0	2,0	2,1	19	1.5
STCM32	**M6 x 1**	3,0	3,0	7,0	62	5.2
STCM35	**M6 x 1**	3,0	3,0	7,0	62	5.2
STCM37	**M8 x 1**	2,5	2,5	4,2	37	3.1
STCM38	**M5 x 0,8**	2,0	2,0	2,1	19	1.5
STCM39	**M10 x 1,25**	3,0	3,0	8,0	71	5.9
STCM40	**M6 x 1**	2,5	2,5	4,2	37	3.1

WEDGELOCK



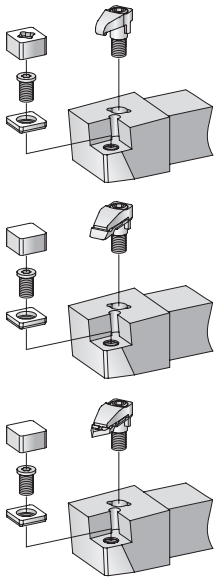
Lock Pin

Catalog number	Thread Size	Top Drive Hex (inch)	Bottom Drive Hex (inch)	Recommended Torque Nm	in-lbs	ft-lbs
FPE5	**#10-24**	1/16	3/32	1,5	13	1.0
FPE6	**#10-24**	3/32	3/32	3,3	30	2.5
		Torx	Torx			
FP453	**M4 x 0,5**	T10	T10	1,7	15	1.2
FP477	**M4 x 0,5**	T10	T10	1,7	15	1.2
		Hex (mm)				
192.159	**M6 x 1**	3	-	4,0	35	3.0
		Torx				
192.636	**M4 x 0,7**	T15	-	2,6	23	2.0

Clamp Screw/Assembly

Catalog number	Thread Size	Top Drive Hex (inch)	Bottom Drive	Recommended Torque Nm	in-lbs	ft-lbs
S986	**1/4 - 20**	5/32	-	8,0	73	6.1
S987	**5/16 - 18**	3/16	-	9,0	80	6.6
		Torx				
MS1372	**M6 x 1,0**	T25	-	9,0	80	6.6
		Hex (mm)	Hex (mm)			
551.125	**M5 x 0,8**	3	3	7,0	58	5.0
551.126	**M6 x 1,0**	3	3	7,0	58	5.0
551.131	**M5 x 0,8**	3	3	7,0	58	5.0

TNT/MTS

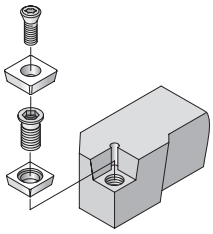


Shim Screw

Catalog number	Thread Size	Top Drive Torx	Bottom Drive	Recommended Torque Nm	in-lbs	ft-lbs
554.260	**M6 x 1,0**	T20	-	5,0	44	4.0
554.261	**M8 x 1,0**	T25	-	8,0	71	6.0
		Hex (mm)				
554.252	**M6 x 1,0**	2,5	-	3,0	27	2.2
554.253	**M8 x 1,0**	3,0	-	6,0	53	4.0
554.254	**M5 x 0,8**	2,5	-	3,0	27	2.2

Clamp Assembly / Lock Pin

Catalog number	Thread Size	Top Drive Torx	Bottom Drive Torx	Recommended Torque Nm	in-lbs	ft-lbs
551.326	**M8 x 1,25**	T25	T25	8,0	71	6.0
551.327	**M8 x 1,25**	T25	T25	8,0	71	6.0
551.342	**M8 x 1,25**	T25	T25	8,0	71	6.0
		Hex (mm)	Hex (mm)			
551.251	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.252	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.253	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.254	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.255	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.256	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.257	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.260	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.261	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.316	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.317	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.332	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
551.333	**M8 x 1,25**	4,0	4,0	8,0	71	6.0
554.016	**M6 x 1,0**	2,5	2,5	3,0	27	2.2
554.017	**M8 x 1,0**	3,0	3,0	6,0	53	4.0
554.018	**M5 x 0,8**	2,0	2,0	1,7	15	1.3



SCREW-ON

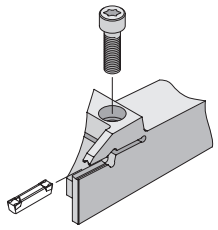
Shim Screw

Catalog number	Thread Size	Top Drive Hex (inch)	Bottom Drive	Recommended Torque Nm	in-lbs	ft-lbs
MS1028	**M3 x 0,5 (INT) M5 x 0,8 (EXT)**	3/32	-	1,7	15	1.00
		Hex (mm)				
SRS3	**M3,5 x 0,6 (INT) M5 x 0,5 (EXT)**	3,5	-	2,2	20	1.66
SRS4	**M4 x 0,5 (INT) M6 x 0,75 (EXT)**	4,0	-	2,6	23	2.00
SRS5	**M5 x 0,8 (INT) M8 x 0,75 (EXT)**	5,0	-	2,8	25	2.00
SRS6	**M6 x 1,0 (INT) M10 x 0,75 (EXT)**	6,0	-	3,4	30	2.50

Insert Screw

Catalog number	Thread Size	Top Drive Torx	Bottom Drive	Recommended Torque Nm	in-lbs	ft-lbs
MS1017	**M2,5 x 0,45**	T7	-	1,00	8	0.60
MS1018	**M4 x 0,7**	T15	-	2,60	23	2.00
MS1019	**M3 x 0,5**	T8	-	1,70	15	1.00
MS1022	**M3 x 0,5**	T8	-	1,70	15	1.00
MS1023	**M2,5 x 0,45**	T7	-	1,00	8	0.60
MS1026	**M2,2 x 0,45**	T7	-	1,00	8	0.60
MS1027	**M3 x 0,5**	T9	-	1,70	15	1.00
MS1129	**M4,5 x 0,75**	T15	-	3,80	34	3.00
MS1152	**M2,2 x 0,45**	T7	-	1,00	8	0.60
MS1153	**M2,5 x 0,45**	T7	-	1,00	8	0.60
MS1154	**M3 x 0,5**	T9	-	1,70	15	1.00
MS1155	**M3,5 x 0,6**	T15	-	1,70	15	1.00
MS1156	**M3,5 x 0,6**	T15	-	1,70	15	1.00
MS1157	**M4 x 0,5**	T15	-	2,60	23	2.00
MS1158	**M4 x 0,5**	T15	-	2,60	23	2.00
MS1159	**M5 x 0,8**	T20	-	5,10	45	4.00
MS1160	**M5 x 0,8**	T20	-	5,10	45	4.00
MS1161	**M6 x 1**	T25	-	8,80	77	6.00
MS1162	**M6 x 1**	T25	-	8,80	77	6.00
MS1163	**M8 x 1,25**	T30	-	21,00	186	15.00
MS1438	**M1,8 x 0,35**	T5	-	0,34	3	0.25
MS1454	**M1,8 x 0,35**	T5	-	0,34	3	0.25
MS1571	**M5 x 0,8**	T20	-	5,10	45	4.00
MS1863	**M2 x 0,4**	T6	-	0,47	4	0.33
MS1864	**M2,5 x 0,45**	T8	-	1,00	8	0.60
MS1871	**M4 x 0,7**	T15	-	2,60	23	2.00
MS1933	**M2,2 x 0,45**	T7	-	1,00	8	0.60
MS1939	**M2,5 x 0,45**	T7	-	1,00	8	0.60
SSA3T	**#5-40**	T10	-	1,70	15	1.00
SSA4T	**#8-32**	T20	-	2,60	23	2.00
SSN2T	**M2,6 x 0,45**	T8	-	1,10	10	0.80

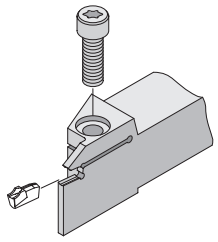
A4



Clamp Screw

Catalog number	Thread Size	Top Drive Torx	Bottom Drive	Recommended Torque Nm	in-lbs
MS1162	**M6 x 1,0**	T25	-	8.8	77
MS1490	**M8 x 1,25**	T45	-	21	186
MS1595	**M6 x 1,0**	T30	-	8.8	77
MS1970	**M6 x 1,0**	T30	-	8.8	77
MS2002	**M6 x 1,0**	T25	-	8.8	77
MS2089	**M5 x 0,8**	25IP	-	5.1	45
MS2091	**M5 x 0,8**	25IP	-	5.1	45
		Hex (mm)			
MS2090	**M3 x 0,5**	1,5	-	1.7	15
193.407	**M5 x 0,8**	2,5	-	5.1	45

A3



Clamp Screw

Catalog number	Thread Size	Top Drive Torx	Bottom Drive	Recommended Torque Nm	in-lbs
MS1160	**M5 x 0,8**	20	-	5.1	45
MS1162	**M6 x 1,0**	25	-	8.8	77
MS1163	**M8 x 1,25**	30	-	21	186
MS1488	**M3,5 x 0,6**	15	-	1.7	15
MS1571	**M5 x 0,8**	20	-	5.1	45
MS1595*	**M6 x 1,0**	30	-	8.8	77
MS1595	**M6 x 1,0**	30	-	8.8	77
MS1875	**M8 x 1,25**	45	-	21	186
MS1944	**M4 x 0,5**	25	-	5.1	45
MS2002	**M6 x 1,0**	25	-	8.8	77
191.916	**M4 x 0,5**	15	-	2.6	23

* for toolholder grooving depth greater than or equal to 26 mm

Features and Compatibility of the Torx Plus and the Torx Drive System

Torx Plus Drive System

The Torx Plus drive system utilizes ellipses to define its geometry and improves upon the original Torx design.

Torx Drive System

The Torx drive system utilizes circles to define its geometry and offers many advantages over other systems.

System Compatibility

The Torx Plus drive system recess is compatible with existing Torx drive tools for field service concerns.

Material Grade Comparison Table

Steel

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	Plain Steel, Cast Steel, Free-Machining Steel								
P1	1.0332	St14		14491CR		1447		1008	
P1	1.1121	Ck10	CC10	040A10		1264		1010	S10C
P1	1.0721	10S20		210M15				1108	
P1	1.0401	C15	CC12	080M15	C15C16	1350	F.111	1015	S15C
P1	1.0402	C22	CC20	050A20	C20C21	1450	F.112	1020	S20C,S22C
P1	1.1141	Ck15	XC12	080M15	C16	1370	C15K	1015	S15C
P1	1.0036	USt37-3			FE37BFU				
P1	1.0715	9SMn28	S250	230M07	CF9SMn28	1912	11SMn28	1213	SUM22
P1	1.0718	9SMnPb28	S250Pb		CF9SMnPb28	1914	11SMnPb28	12L3	SUM22L
P2	1.0501	C35	CC35	060A35	C35	1550	F.113	1035	S35C
P2	1.0503	C45	CC45	080M46	C45	1650	F.114	1045	S45C
P2	1.1158	Ck25	XC25	070M25	C25			1025	S25C
P2	1.1183	Cf35	XC38TS	060A35	C36	1572		1035	S35C
P2	1.1191	Ck45	XC42	080M46	C45	1672	C45K	1045	S45C
P2	1.1213	Cf53	XC48TS	060A52	C53	1674		1050	S50C
P3	1.5415	15Mo3	15D3	1501-240	16Mo3KW	2912	16Mo3	ASTMA204GrA	
P3	1.5423	16Mo5		1503-245-420	16Mo5		16Mo5	4520	SB450M
P1	1.0050	St50-2			FE50				SM50YA
P3	1.7242	16CrMo 4	18CrMo4			18CrMo4			
P3	1.7337	16CrMo 4 4			A18CrMo45KW			A387Gr.12Cl.	
P3	1.7362	12CrMo 19 5	Z10CD5.05	3606-625	16CrMo205				
P1	1.0060	St60-2			FE60-2				SM570
P2	1.0535	C55		070M55	C55	1655		1055	S55C
P2	1.0601	C60	CC55	080A62	C60			1060	S60C
P2	1.1203	Ck55	XC55	070M55	C50		C55K	1055	S55C
P2	1.1221	Ck60	XC60	080A62	C60	1678		1060	S58C
P3/4	1.1545	C1051			C100KU				SK3
P3/4	1.1545	C105W1			C100KU				SK3
P1	1.0070	St70-2			FE70-2				
P3/4	1.7238	49CrMo4							
P3/4	1.7561	42CrV6							
P3/4	1.7701	51CrMoV4	51CDV4		51CrMoV4				
	Low-Alloy Steel, Cast Steel, Free-Machining Steel								
P3/4	1.2067	100Cr6	Y100C6	BL3			100Cr6	L3	SUJ2
P3/4	1.2210	115CrV3	100C3		107CrV3KU			L2	
P3/4	1.2241	51CrV4							
P3/4	1.2419	105WCr6	105WC13		10WCr6	2140	105WCr5		SKS31
P3/4	1.2419	105WCr6	105WC13		107WCr5KU				SKS31
P3/4	1.2542	45WCrV7		BS1	45WCrV8KU	2710	45WCrSi8	S1	
P3/4	1.2550	60WCrV7	55WC20		58WCr9KU	~2710		S1	
P3/4	1.2713	55NiCrMoV6	55NCDV7				F.520.S	L6	SKH1;SKT4
P3/4	1.2721	50NiCr13				~2550			
P3/4	1.2762	75CrMoNiW67							
P3/4	1.2762	75CrMoNiW67							
P3/4	1.2842	90MnCrV8	90MV8	BO2	88MnV8KU			O2	
P3/4	1.3505	100Cr6	100C6	534A99	100Cr6	2258		52100	SUJ2
P3	1.5622	14Ni6	16N6		14Ni6		15Ni6	ASTMA350LF5	
P3	1.5732	14NiCr10	14NC11		16NiCr11		15NiCr11	3415	SNC415(H)
P3	1.5752	14NiCr14	12NC15	655M13				3415;3310	SNC815(H)
P3/4	1.6511	36CrNiMo4	40NCD3	816M40	38NiCrM04(KB)		33NiCrMo4	9840	SNCM447
P3/4	1.6523	21NiCrMo2	20NCD2	805M20	20NiCrMo2	2506	20NiCrMo2	8620	SNCM220(H)
P3/4	1.6546	40NiCrMo22		311-TYPE7	40NiCrM02(KB)		40NiCrMo2	8740	SNCM240
P3/4	1.6582	35CrNiMo6	35NCD6	817M40	35NiCrMo6(KB)	2541		4340	SNCM447
P3	1.6587	17CrNiMo6	18NCD6	820A16			14NiCrMo13		
P3	1.6657	14NiCrMo34		832M13	15NiCrMo13		14NiCrMo131		
P3/4	1.7033	34Cr4	32C4	530A32		34Cr4(KB)	35Cr4	5132	SCR430(H)
P3/4	1.7035	41Cr4	42C4	530M40			42Cr4	5140	SCR440(H)
P3/4	1.7045	42Cr4	42C4TS	530A40	41Cr4	2245	42Cr4	5140	SCr440
P3	1.7131	16MnCr5	16MC5	(527M20)	16MnCr5	2511	16MnCr5	5115	SCR415
P3/4	1.7176	55Cr3	55C3	527A60				5155	SUP9(A)
P3/4	1.7218	25CrMo4	25CD4	1717CDS110	25CrMo4(KB)	2225	55Cr3	4130	SM420;SCM430
P3/4	1.7220	34CrMo4	35CD4	708A37	35CrMo4	2234	34CrMo4	4137;4135	SCM432;SCCRM3

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	Plain Steel, Cast Steel, Free-Machining Steel								
P3/4	1.7223	41CrMo4	42CD4TS	708M40	41CrMo4	2244	42CrMo4	4140;4142	SCM440
P3/4	1.7225	42CrMo4	42CD4	708M40	42CrMo4	2244	42CrMo4	4140	SCM440(H)
P3	1.7262	15CrMo5	12CD4			2216	12CrMo4		SCM415(H)
P3	1.7335	13CrMo4 4	15CD3.5/4.5	1501-620-Gr27	14CrMo45		14CrMo45	ASTMA182	SPVAF12
P3/4	1.7361	32CrMo12	30CD12	722M24	32CrMo12	2240	F.124.A		
P3	1.7380	10CrMo9 10		1501-622Gr31;45				ASTMA182F.22	SPVA,SCMV4
P3	1.7715	14MoV6 3		1503-660-440			13MoCrV6		
P3/4	1.8159	50CrV4	50CrV4	735A50	50CrV4	2230	51CrV4	6150	SUP10
P3/4	1.8159	50CrV4		735A50	51CrV4	2230		6150	SUP10
P3/4	1.3501	100Cr2	100C2					E50100	
P3/4	1.5710	36NiCr6	35NC6	640A35				3135	SNC236
P3/4	1.5736	36NiCr10	30NC11					3435	SNC631(H)
P3/4	1.5755	31NiCr14	18NC13	653M31					SNC836
P3/4	1.7733	24CrMoV55	20CDV6		21CrMoV511				
P3/4	1.7755	GS-45CrMoV104							
P3	1.8070	21CrMoV511			35NiCr9				
P3/4	1.8509	41CrALMo7	40CAD6,12	905M39	41CrAlMo7	2940	41CrAlMo7		SACM645
P3/4	1.8523	39CrMoV139		897M39	36CrMoV12				
P3/4	1.2311	40CrMnMo7			35CrMo8KU				
P5/6	1.4882	X50CrMnNiNbN219	Z50CMNNb21.09						
P3/4	1.5864	35NiCr18							
	High-Alloy Steel, Cast Steel								
P3/4	1.2343	X38CrMoV51	Z38CDV5	BH11	X37CrMoV51KU		X37CrMoV5	H11	SKD6
P3/4	1.2344	X40CrMoV51	Z40CDV5	BH13	X40CrMoV511KU	2242	X40CrMoV5	H13	SKD61
P3/4	1.2379	X155CrVMo121	Z160CDV12	BD2	X155CrVMo121KU			D2	SKD11
P3/4	1.2436	X210CrW12			X215CrW121KU	2312	X210CrW12		SKD2
P3/4	1.2581	X30WCrV93	Z30WCV9	BH21	X30WCrV93KU		X30WCrV9	H21	SKD5
P3/4	1.2601	X 165CrMoV12			X165CrMoW12KU	2310	X160CrMoV12		
P3/4	1.2606	X37CrMoW 51	Z35CWDV5	BH12	X35CrMoW05KU		F.537	H12	SKD62
P5/6	1.5662	X8Ni9		1501.509; 50	X10Ni9		XBNi09	ASTMA353	SL9N53
P3	1.5680	12Ni19	Z18N5					2515	
P3/4	1.3202	S12-1-4-5		BT15	HS12-1-5-5		12-1-5-5		
P3/4	1.3207	S10-4-3-10	Z130WKCDV	BT42	HS10-4-3-10				SKH57
P3/4	1.3243	S6-5-2-5	KCV06-05-05-04-02		HS6-5-2-5	2723	6-5-2-5	T15	SKH55
P3/4	1.3246	S7-4-2-5	Z110WKCDV07-05-04		HS7-4-2-5	7-4-2-5	M35		
P3/4	1.3247	S2-10-1-8	Z110DKCWV09-08-04	BM42	HS2-9-1-8	2-10-1-8	M41		SKH51
P3/4	1.3249	S2-9-2-8		BM34			2-9-2-8	M42	
P3/4	1.3343	S6-5-2	Z85WDCV	BM2	HS6-5-2-5	2722		M35	SKH9; SKH51
	Stainless Steel, Cast Steel								
P5/6	1.4000	X6Cr13	Z6C13	403S17	X6Cr3	2301	F.3110	403	SUS403
P5/6	1.4001	X6Cr14					F.8401		410S, 429
P5/6	1.4002	X6CrAl13	Z8CA12	405S17	X6CrAl13			405	SUS405
P5/6	1.4006	(G-)X10Cr13	Z10C13	410S21	X12Cr13	2302	F.3401	SUS410	SUS410
P5/6	1.4016	X8Cr17	Z8C17	430S15	X8Cr17	2320	F.3113	430	SUS430
P5/6	1.4021	X20Cr13	Z20C13	420S37	X20Cr13	2303		420	SUS420J1
P5/6	1.4027	G-X20Cr14	Z20C13M	420C29					SCS2
P5/6	1.4086	G-X120Cr29		452C11					
P5/6	1.4104	X12CrMoS17	Z10CF17	441S29	X10CrS17	2383	F.3117	430F	SUS430F
P5/6	1.4113	X6CrMo17	Z8CD1701	434S17	X8CrMo17	2325		434	SUS434
P5/6	1.4340	G-X40CrNi274							
P5/6	1.4417	X2CrNiMoSi195				2376		S31500	
P5/6	1.4720	X20CrMo13							
P5/6	1.4724	X10CrA113	Z10C13	403S17	X10CrA112		F.311	405	SUS405
P5/6	1.4742	X10CrA118	Z10CAS18	430S15	X8Cr17		F.3113	430	SUS430
P5/6	1.4762	X10CrA124	Z10CAS24		X16Cr26	2322		446	SUH446
P5/6	1.4034	X46Cr13	Z40CM	420S45	X40Cr14	2304	F.3405		
P5/6	1.4057	X20CrNi17	Z6CNi6.02	431S29	X16CrNi16	2321		431	SUS431
P5/6	1.4125	X105CrMo17	Z100CD17		X 105CrMo17				SUS440C

Material Grade Comparison Table

Stainless Steel and Cast Iron

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	Austenitic Stainless Steel								
M1	1.4301	X5CrNi189	Z6CN18.09	304S15	X5CrNi1810	2332	F.3551	304	SUS304
M1	1.4310	X12CrNi177	Z12CN17.07	301S21	X2CrNi1807	2331	F.3517	301	SUS301
M1	1.4311	X2CrNiN1810	Z2CN18.10	304S62	X2CrNiN1810	2371		304LN	SUS304LN
M1	1.4312	G-X10CrNi188	Z10CN18.9M	302C25					
M1	1.4350	X5CrNi189	Z6CN18.09	304S31	X5CrNi1810	2332/2333	F.3551	304	
M1	1.4362	X2CrNiN234	Z2CN23-04AZ			2327		S32304	
M2	1.4401	X5CrNiMo17122	Z6CND17.11	316S16	X5CrNiMo1712	2347	F.3543	316	SUS316
M2	1.4404	X2CrNiMo1810	Z2CND17.12	316S12	X2CrNiMo1712	2343/2348/2553		316L	SUS316
M2	1.4410	G-X10CrNiMo189	Z5CND20.12M						
M2	1.4429	X2CrNiMoN17133	Z2CND17.13	316S63	X2CrNiMoN1713	2375		316LN	SUS316LN
M2	1.4435	X2CrNiMo18143	Z2CND17.12	316S13	X2CrNiMo1712	2353		316L	SCS16
M2	1.4436	X5CrNiMo17133	Z6CND18-12-03	316S33	X8CrNiMo1713	2343/2347		316	SUS316
M2	1.4438	X2CrNiMo18164	Z2CND19.15	317S12	X2CrNiMo1816	2367		317L	SUS317L
M2	1.4500	G-X7NiCrMoCuNb2520	23NCDU25.20M						
M2	1.4541	X10CrNiMoTi1810	Z6CNT18.10	321S12	X6CrNiTi1811	2337	F.3553F.3523	321	SUS321
M2	1.4550	X10CrNiNb	Z6CNNb18.10	347S17	X6CrNiNb1811	2338	F.3552F.3524	347	SUS347
M2	1.4552	G-X7CrNiNb189	Z4CNNb19.10M	347C17					
M2	1.4571	X10CrNiMoTi1810	Z6NDT17.12	320S17	X6CrNiMoTi1712	2350	F.3535	316Ti	SUS316TI
M2	1.4583	X10CrNiMoNb1812	Z6CNDN1713B		X6CrNiMoNb			318	
M2	1.4585	G-X7CrNiMoCuNb1818			X6CrNiMoTi1712				
M1	1.4828	X15CrNiSi2012	Z15CNS20.12	309S24				309	SUH309
M2	1.4845	X12CrNi2521	Z12CN2520	310S24	X6CrNi2520	2361	F.331	310S	SUH310; SUS310S
	Austenitic/Ferritic Stainless Steel (Duplex)								
M3	1.4460	X8CrNiMo275				2324		S32900	SUS329J1
M3	1.4462	X2CrNiMoN2253	Z2CND22-05-03			2977			
M3	1.4821	X20CrNiSi254	Z20CNS25.04						
M3	1.4823	G-X40CrNiSi274							
	Gray Cast Iron								
K1	0.6010	GG10	Ft10D		G10	110		CLASS20	FC100
K1	0.6015	GG15	Ft15D	GRADE150	G15	115	FG15	CLASS25	FC150
K1	0.6020	GG20	Ft20D	GRADE220	G20	120	FG20	CLASS30	FC200
K1	0.6025	GG25	Ft25D	GRADE260	G25	125	FG25	CLASS35	FC250
K1	0.6030	GG30	Ft30D	GRADE300	G30	130	FG30	CLASS45	FC300
K1	0.6035	GG35	Ft35D	GRADE350	G35	135	FG35	CLASS50	FC350
K1	0.6040	GG40	Ft40D	GRADE400		140		CLASS55	FC400
	Gray Cast Iron with Nodular Graphite								
K2	0.7033	GGG35.3				0717-15			FCD350
K2	0.7040	GGG40	FCS400-12	SNG420/12	GGG40	0717-02	GGG40	60-40-18	FCD400
K2	0.7043	GGG40.3	FGS370-17	SNG370/17		0717-12			FCD400
K3	0.7050	GGG50	FGS500-7	SNG500/7	GGG50	0727-02	GGG50	80-55-06	FCD500
K3	0.7060	GGG60	FGS600-3	SNG600/3	GGG60	0732-03	GGG60		FCD600
K3	0.7070	GGG70	FGS700-2	SNG700/2	GGG70	0737-01	GGG70	100-70-03	FCD700
	White malleable Cast Iron								
K1	0.8040	GTW-40	MB40-10	W410/4	GMB40		GTW40		
K1	0.8045	GTW-45			GMB45		GTW45		
K1	0.8055	GTW-55					GTW55		
K1	0.8065	GTW-65					GTW65		
K2	0.8135	GTS-35	MN35-10	B340/12		810	GTS35	32510	
K2	0.8145	GTS-45		P440/7		852	GTS45	40010	
K1	0.8035	GTW-35	MB35-7	W340/3			GTW35		
K3	0.8155	GTS-55	MP50-5	P510/4		854	GTS55	50005	
K3	0.8165	GTS-65	MP60-3	P570/3		856	GTS65	70003	
K3	0.8170	GTS-70	M870-2	P690/2		0862; 0864	GTS70	90001	

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	Aluminium Alloys								
N1	3.0255	Al99.5	A59050C	L31/34/36				1000	
N1	3.3315	AlMg1							
N1	3.1655	AlCuSiPb							
N1	3.1754	G-AlCu5Ni1,5	3.4345	AlZnMgCu0,5	AZ4GU/9051	L86	811-04		7050
N2	3.2373	G-AlSi9Mg							
N2	3.2381	G-AlSi10Mg							
N2	3.2382	GD-AlSi10Mg							
N2	3.2383	G-AlSi10Mg (Cu)		LM9		4253		A360.2	
N2	3.2383	GK-AlSi10Mg (Cu)		LM9		4253		A360.2	
N2	3.2581	G-AlSi12		LM6		4261		A413.2	
N2	3.2582	GD-AlSi12				4247		A413.0	A6061
N2	3.2583	G-AlSi12 (Cu)		LM20		4260		A413.1	ADC12
N1	3.3561	G-AlMg5	A-SU 12	LN5		4252		GD-AlSi12	AC4A
N1	3.5101	G-MgZn4SE1Zr1	G-Z4TR	MAG5				ZE41	
N1	3.5103	MgSE3Zn2Zr1	G-TR3Z2	MAG6				EZ33	
N1	3.5106	G-MgAg3SE2Zr1	G-Ag22,5	MAG12				QE22	
N1	3.5812	G-MgAl8Zn1	G-A9	MAG1				AZ81	
N1	3.5912	G-MgAl9Zn1	G-A9Z1	MAG7				AZ91	
N1	2.1871	G-AlCu4TiMg							
N1	3.2371	G-AlSi7Mg						4218B	
	Copper Alloys								
N3	2.1090	G-CuSn7ZnPb	U-E7Z5Pb4					C93200	
N3	2.1096	G-CuSn5ZnPb	U-E5Pb5Z5	LG2				C83600	
N3	2.1098	G-CuSn2ZnPb							
N3	2.1176	G-CuPb10Sn	U-E10Pb10	LB2				C93700	
N3	2.1182	G-CuPb15Sn	U-Pb15E8	LB1				C93800	
N3	2.0240	CuZn15	CuZn15	CZ102				C23000	
N3	2.0265	CuZn30	CuZn30	CZ106				C26000	
N3	2.0321	CuZn37	CuZn36, CuZn37	CZ108	C2700,C2720			C27200, C27700	
N3	2.0592	G-CuZn35Al1	U-Z36N3	HTB1				C86500	
N3	2.0596	G-CuZn34Al2	U-Z36N3	HTB1				C86200	
N3	2.1188	G-CuPb20Sn	U-Pb20	LB5				C94100	
N3	2.1292	G-CuCrF35		CC1-FF				C81500	
N3	2.1293	CuCrZr	U-Cr0,8Zr	CC102				C18200	
N3	2.0966	CuAl10Ni5Fe4	U-A10N	Ca104				C63000	
N3	2.0975	G-CuAl10Ni						B-148-52	
N3	2.1050	G-CuSn10		CT1				C90700	
N3	2.1052	G-CuSn12	UE12P	Pb2				C90800	
N4		Nylon, Plastics, Rubbers, Phenolics and Resins							
N5		Carbon and Graphite Composites, brush alloys, Kevlar, Graphite(280 - 400 HB, 30 - 40 HRC)							
N6		MMC's (Aluminium-based Metal Matrix Composites)							

Material Grade Comparison Table

High-Temp Alloys

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	Super-Alloys Fe-based				**US Trade Designation**				
S1	1.4558	X2NiCrAlTi3220		NA15	Incoloy 800			N08800	
S1	1.4562	X1NiCrMoCu32287						N08031	
S1	1.4563	X1NiCrMoCuN31274	Z1NCDU31.27					N08028	
S1	1.4864	X12NiCrSi	Z12NCS35.16					330	SUH330
S1	1.4864	X12NiCrSi3616	Z12NCS35.16	NA17				N08330	SUH330
S1	1.4958	X5NiCrAlTi3120							
S1	1.4977	X40CoCrNi2020	Z42CNKDWNb						
					A-286			S66286	
					Greek Ascoloy			S41800	
					Haynes 556 (HS556)			R30556	
					N155			R30155	
	Super-Alloys Co-based				**US Trade Designation**				
S2					Haynes 188			R30188	
S2					L605 (Haynes 25)			R30605	
S2					MARM-302, 322, 509				
S2					Stellite 6, 21, 31				
	Super-alloys Ni-based				**US Trade Designation**				
S3	2.4360	NiCu30Fe	NU30	NA13	Monel 400				
S3	2.4610	NiMo16Cr16Ti			Hastelloy C-4				
S3	2.4630	NiCr20Ti	NC20T	HR5, 203-4	Nimonic 75			N06075	
S3	2.4642	NiCr29Fe	NC30Fe		Inconel 690				
S3	2.4810	G-NiMo30			Hastelloy C			N10276	
S3	2.4856	NiCr22Mo9Nb	NC22FeDNb	NA21	Inconel 625			N06625	
S3	2.4858	NiCr21Mo	NC21FeDU	NA16	Incoloy 825			N08825	
S3	2.4375	NiCu30 Al	NU30AT	NA18	Monel K-500				
S3	2.4668	NiCr19FeNbMo	NC19FeNb		Inconel 718			N07718	
S3	2.4669	NiCr15Fe7TiAl	NC15TNbA		Inconel X-750			N07750	
S3	2.4685	G-NiMo28			Hastelloy B			N10001	
S3	2.4694	NiCr16Fe7TiAl			Inconel 751			N00751	
	Titanium and titanium alloys				**US Trade Designation**				
S4	3.7025	Ti 1		2TA1				R50250	
S4	3.7124	TiCu2		2TA21-24					
S4	3.7195	TiAl3V2.5							
S4	3.7225	Ti1Pd		TP1				R52250	
S4	3.7115	TiAl5Sn2							
S4	3.7145	TiAl6Sn2Zr4Mo2Si						R54620	
S4	3.7165	TiAl6V4	T-A6V	TA10-13; TA28	TiAl6V4			R56400	
S4	3.7175	TiAl6V6Sn2			Ti6V6Al2Sn			R56620	
S4	3.7185	TiAl4Mo4Sn2		TA45-51; TA57					

Mat. Group	Mat. No.	Germany DIN	France AFNOR	Great Britain BS	Italy UNI	Sweden SS	Spain UNE	U.S.A. AISI/SAE UNS	Japan JIS
	White Cast Iron								
H1	0.9620	G-X260NiCr42		Grade 2A		0512-00		Ni- Hard 2	
H1	0.9625	G-X330NiCr42		Grade 2B		0513-00		Ni- Hard 1	
H1	0.9630	G-X300CrNiSi952						Ni- Hard 4	
H1	0.9635	G-X300CrMo153							
	Hardened Cast Iron								
H1	0.9640	G-X300CrMoNi1521							
H1	0.9645	G-X260CrMoNi2021							
H1	0.9650	G-X260Cr27		Grade 3D		0466-00		A532IIIA25%Cr	
H1	0.9655	G-X300CrMo271							
H1	0.9655	G-X300CrMo271		Grade 3E				A532IIIA25%Cr	

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A-CCLP KENDEX Boring Bars. A214
A-CDUN-MX TOP NOTCH TURNING Boring Bars A210
A-CRGN KENDEX Boring Bars. A212
A-CRGN-MN TOP NOTCH TURNING Boring Bars A210
A-CSKN KENDEX Boring Bars. A213
A-CSKN-MN TOP NOTCH TURNING Boring Bars A211
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Metalcutting Safety

(Please read this before using products listed in this catalog.)

Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metalcutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to over-stress, severe impact or are otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers and equipment against hot, flying chips, fragmented cutting tools, broken workpieces or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding carbide or other advanced cutting tool materials, a suitable means for collection and disposal of dust, mist or sludge should be provided. Overexposure to dust or mist containing metallic particles can be hazardous to health, particularly if exposure continues over an extended period of time, and may cause eye, skin and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection and eye protection should be provided when grinding, and workers should avoid breathing of and prolonged skin contact with dust or mist. General Industry Safety and Health Regulations, Part 1910, U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain from Kennametal and read the applicable Material Safety Data Sheet before grinding.

Cutting tools are only one part of the worker-machine tool system. Many variables exist in machining operations, including: metal removal rate; workpiece size, shape, strength and rigidity; chucking and fixturing; the load carrying capability of centers; cutter and spindle speed and torque limitations; the holder and boring bar overhang; available power, and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

Kennametal has no control over the end use of its products or the environment into which those products are placed. Kennametal urges that its customers adhere to the recommended standards of use of their metalcutting machines and tools, and that they follow procedures that ensure safe metalcutting operations. The technical information included throughout this catalog, as well as recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.

For more information, we suggest you obtain Kennametal's Metalcutting Safety booklet, if you do not already have one. Quantities of safety booklets and Material Safety Data Sheets may be obtained free from the Kennametal Corporate Compliance Office at 724-539-5747, or fax 724-539-5439.

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