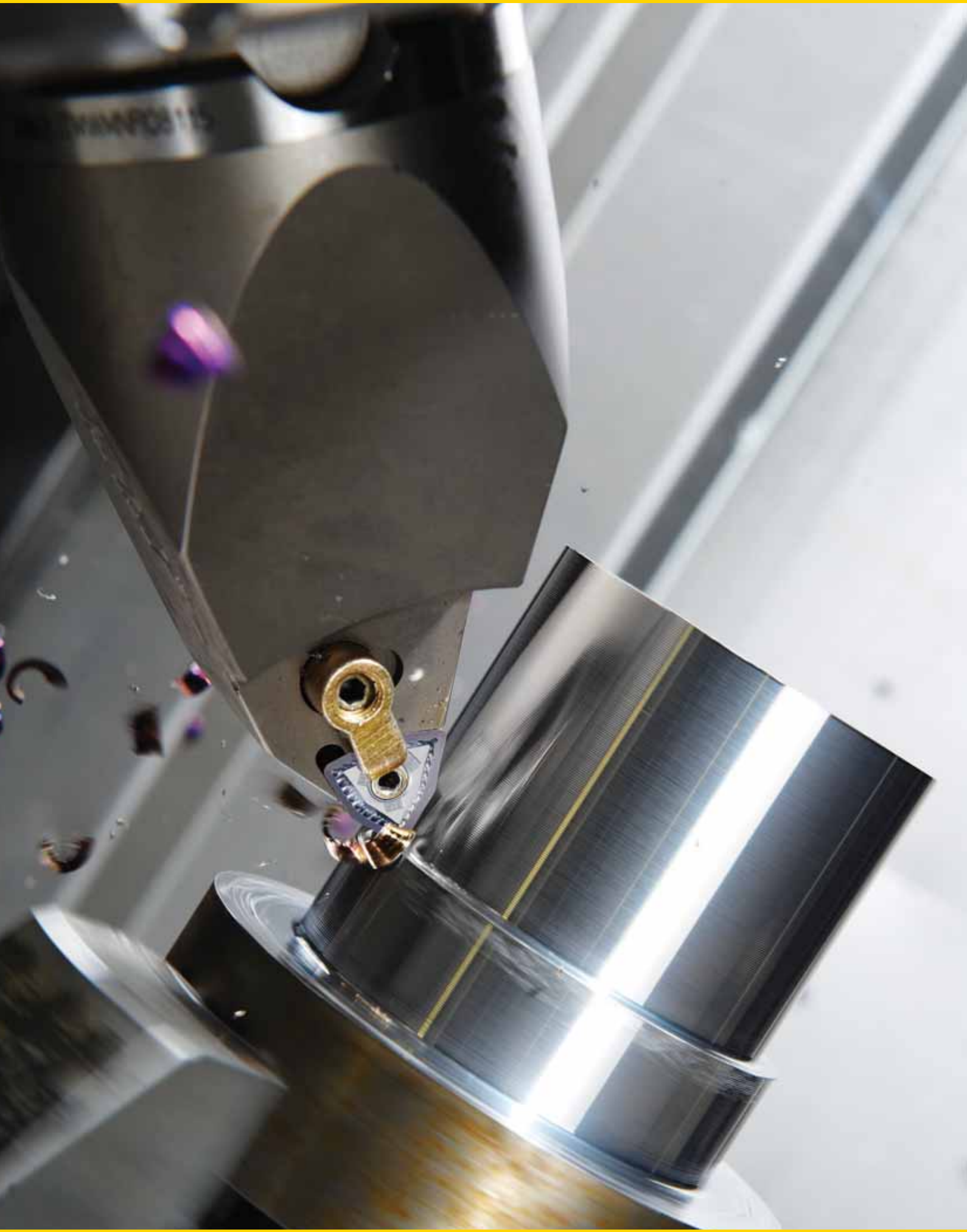


ISO/ANSI Inserts

Kennametal Inserts B2–B23

Grades and Grade Descriptions B24–B31

Chip Control Geometries B32–B37

ISO/ANSI Carbide Inserts B38–B115

ISO/ANSI Ceramic Inserts B116–B130

Superhard Materials • PCBN/PCD Inserts B132–B197





Inserts for Every Turning Operation

Kennametal, the trusted innovator in metalcutting technology, offers a complete range of indexable inserts for general turning operations. From roughing to finishing, Kennametal has the correct insert.

Plus, Kennametal offers the next generation in tooling with Beyond™. Harnessing advanced science and exceptional experience, our Beyond inserts deliver unparalleled levels of productivity, efficiency, dependability, and profitability.

Features and Benefits

Up to 30% Higher Productivity and Profitability

- Achieve higher metal removal rates (speed, feed, and depth of cut).
- Gain longer tool life.

Versatility

- Products can be applied across a wide range of applications.
- Can be used in low- to high-speed applications.

Reliability

- Deliver uniform wear for predictable tool life.
- Achieve reduced depth-of-cut notching.
- Virtually eliminate chip flow damage.

Complete Portfolio

- The Beyond product portfolio can be used in a complete range of steel, cast iron, and stainless steel ISO turning workpieces.



Technical Details • Features

Post-Coat Treatment

- Improves edge toughness.
- Long predictable tool life.
- Reduces depth-of-cut notching.
- Wide range of applications.
- Reduces stresses.
- Reduces microchipping.
- Improves coating adhesion.

Fine-Grained Alumina Layer

- Provides coating integrity at elevated speeds.
- Higher productivity and dependability at high cutting temperatures.



Micro-Polished Edges

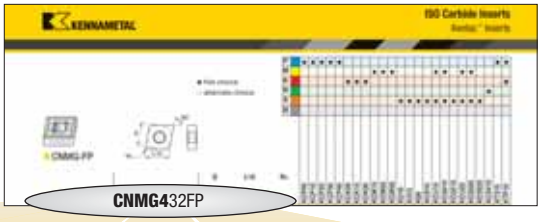
- Improves edge toughness.
- Provides smooth outer surface to reduce forces, friction, and workpiece sticking.

Post-Coat Grinding — Bottom

- Provides secure seating surface.

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



C — Insert Shape

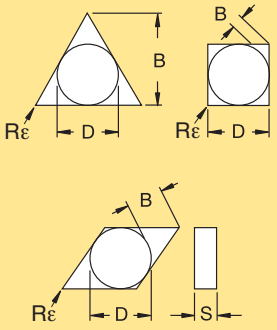
H	Hexagon	120°
O	Octagon	135°
P	Pentagon	108°
R	Round	—
S	Square	90°
T	Triangular	60°
C	Rhomboid	80°
D		55°
E		75°
M		86°
V		35°
W	Trigon	80° with enlarged corner angles
L	Rectangular	90°
A	Parallelogram	85°
B		82°
N/K		55°

N — Insert Clearance Angle

A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Indicated for other clearance angles requiring descriptions.

M — Tolerance Class

Tolerances apply prior to edge prep and coating



D = Theoretical diameter of the insert inscribed circle
S = Thickness
B = See figures below

G — Insert Features

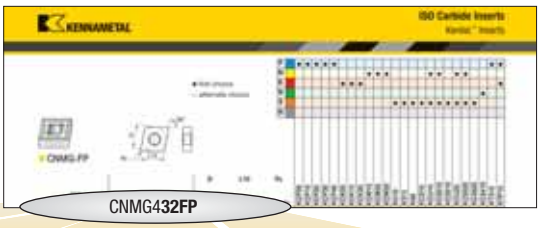
N	
R	
F	
A	
M	
G	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special Design

4 — Size

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

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±.0010"	±.0005"	±.001"
H	±.0005"	±.0005"	±.001"
E	±.0010"	±.0010"	±.001"
G	±.0010"	±.0010"	±.005"
M	See tables on the next page		±.005"
U	See tables on the next page		±.005"

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



3 — Thickness S

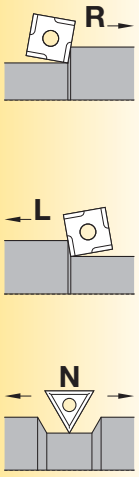
symbol inch	thickness inch
.5 (1)	1/32
.6	.040
1 (2)	1/16
1.2	5.64
1.5 (3)	3/32
2	1/8
2.5	5/32
3	3/16
3.5	7/32
4	1/4
5	5/16
6	3/8
7	7/16
18	1/2

2 — Corner Radius "Rε"

symbol inch	corner radius inch
X0	.0015
0	.004
.5	.008
1	1/64
2	1/32
3	3/64
4	1/16
5	5/64
6	3/32
7	7/64
8	1/8
–	round insert
–	

Hand of Insert *(optional)*

R = Right hand
L = Left hand
N = Neutral



Cutting Edge *(optional)*

F Sharp
E Rounded
T Chamfered
S Chamfered and Rounded
K Double-Chamfered
P Double-Chamfered and Rounded

FP — Chipbreaker *(optional)*

F = Sharp
FF = Fine Finishing
FN = Finishing Negative
MN = Medium Negative
RN = Roughing Negative
UN = Universal Medium
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
UP = Universal Positive
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

"D" inch	± Tolerance on "D" Class M Tolerance Shapes S, T, C, R, & W inch	Class M Tolerance Shape D inch	Class U Tolerance Shape V inch	Class U Tolerance Shapes S, T, & C inch
5/32	.002	–	–	–
3/16	.002	–	–	.003
7/32	.002	.002	.002	.003
1/4	.002	.002	.002	.003
5/16	.002	.002	.002	.003
3/8	.002	.002	.002	.003
7/16	.003	.003	.003	.005
1/2	.003	.003	.003	.005
9/16	.003	.003	.003	.005
5/8	.004	.004	.004	.007
11/16	.004	.004	.004	.007
3/4	.004	.004	.004	.007
7/8	.005	–	–	.010
1	.005	–	–	.010
1 1/4	.006	–	–	.010

"D" inch	± Tolerance on "B" Class M Tolerance Shapes S, T, C, R, & W inch	Class M Tolerance Shape D inch	Class U Tolerance Shape V inch	Class U Tolerance Shapes S, T, & C inch
5/32	.003	–	–	–
3/16	.003	–	–	.005
7/32	.003	.004	–	.005
1/4	.003	.004	–	.005
5/16	.003	.004	–	.005
3/8	.003	.004	.007	.005
7/16	.005	.006	–	–
1/2	.005	.006	.010	.008
9/16	.005	.006	–	–
5/8	.006	.007	–	.011
11/16	.006	.007	–	.011
3/4	.006	.007	–	.011
7/8	.006	–	–	.015
1	.007	–	–	.015
1 1/4	.008	–	–	.015

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!

Grade • Beyond™

K	C	P	M	25	A
Brand	Insert Material	Primary Workpiece Material (ISO 513)	Secondary Workpiece Material *(optional)*	Application Range	Future Upgrades *(optional)*

K = Kennametal

Blank = Carbide, uncoated
C = Carbide, coated
T = Cermet
Y = Ceramic
D = PCD
B = PCBN
S = Steel

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

U = Universal Machining

Hardest

5	fine finishing
10	finishing
15, 20	medium to roughing
25, 30, 35	roughing
40, 45, 50	heaviest roughing

Toughest

A = Generation 1
B = Generation 2
C = Generation 3
etc.

NOTE: Application range does not apply to PCBN grades.

Grade • Kenna Perfect™

K	C	9	2	25
		Coating Type	Material Group	Wear Application Range/Toughness Range

9 = CVD (Chemical Vapor Deposition)
5 = PVD (Physical Vapor Deposition)

1 =	P	Steel
2 =	M	Stainless Steel
3 =	K	Cast Iron
4 =	N	Non-Ferrous Materials
5 =	S	High-Temp Alloys
6 =	H	Hardened Materials

0 = Universal Machining

Hardest

10	highly wear resistant
to	
50	extremely tough

Toughest

NOTE: Application range does not apply to PCBN grades.

Positive Inserts



Screw-On Inserts

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

See pages:
Carbide: B88–B115
Superhard: B187–B197



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:
Carbide: B84–B87
Ceramic: B128–B130
Superhard: B185–B186

See pages B128–B129 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 F43–F48 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 page F61 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:
Carbide: B40–B83
Ceramic: B118–B121
Superhard: B187–B197



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 B122–B127 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 B122–B127 for product listing.

Insert Selection System

How to Use

Kennametal's three-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:
Six workpiece material groups

Step 1 • Select the insert geometry

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

Step 2 • Select the grade

Given: cutting conditions:
lightly interrupted cut
Geometry: -MN
Unknown: grade
Solution: KCP25

Step 3 • Select the cutting speed

Given: grade KCP25
cutting conditions
AISI 1010
Unknown: cutting speed
Solution: 925 SFM (280 m/min)

Need help in selecting a product?
Additional information can be obtained by contacting Kennametal's Customer Application Support Team.
Go to www.kennametal.com for your country's phone number.

Step 1 • Select the insert geometry

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

beyond

Negative Inserts



-RN

-RP* (positive)

Roughing



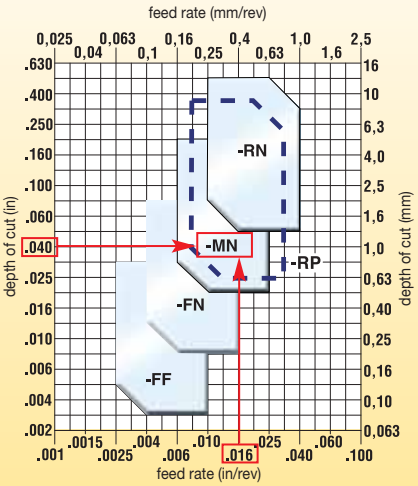
-FN Finishing



-MN Medium Machining



-FF Fine Finishing



*-RP – Supplemental geometry for high-strength materials

Step 2 • Select the grade

cutting condition	-FF	-FN	-MN	-RN	-RP	-11	-UF	-LF	-FP	-MF	-MP
heavily interrupted cut	KCP10	KCP25	KCP30	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCU25/KCP25	KCP40	KCM25
lightly interrupted cut	KCP10	KCP25	KCP25	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin	KCP05/KT315	KCP10	KCP10	KCP30/KCP40	KCP30/KCP40	KT315	KCP10	KCP10	KCP10	KCP10	KCP10

Step 3 • Selecting the cutting speed

Low-Carbon (<0,3% C) and Free-Machining Steel — **speed — m/min (SFM)** — **starting conditions**

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P1	KCP05/KTP10										435	1450
	KCP10										395	1320
	KCP25										275	925
	KCP30/KCP40										210	700

New Beyond™ Material Group Selection Guide:

To optimize speed recommendations, Beyond material subgroups have been added to each of the six workpiece material groups.

material	material group ISO code	number of material subgroups
steel	P	1–6
stainless steel	M	1–3
cast iron	K	1–3
non-ferrous materials	N	1–8
high-temp alloys	S	1–4
hardened materials	H	1

Step 1 • Select the insert geometry

Negative Wiper Inserts



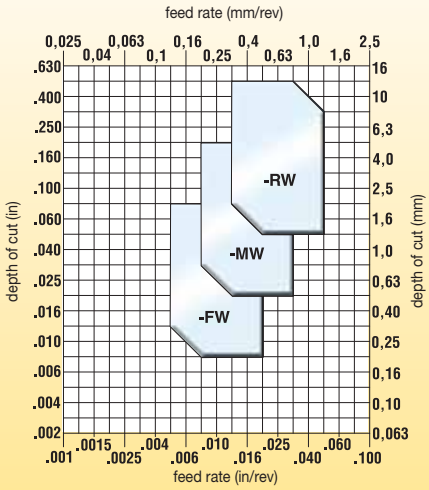
-RW
Rough Wiper



-MW
Medium Wiper



-FW
Finishing Wiper



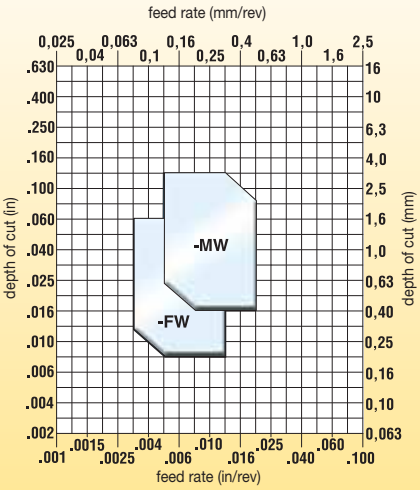
Positive Wiper Inserts



-MW
Medium Wiper



-FW
Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FW	Negative Insert Geometry -MW	Negative Insert Geometry -RW	Positive Insert Geometry -FW	Positive Insert Geometry -MW
heavily interrupted cut		–	–	KCP25	–	KCP25
lightly interrupted cut		KCP10	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin		KCP05/KT315	KCP10	KCP10	KCP10/KCK20	KCP10/KCK20
smooth cut, pre-turned surface		KCP05/KT315	KCP05	KCP10	KCP10/KT315	KT315/KT315

Step 1 • Select the insert geometry

Negative Inserts



-RN



-RP*
(positive)
Roughing



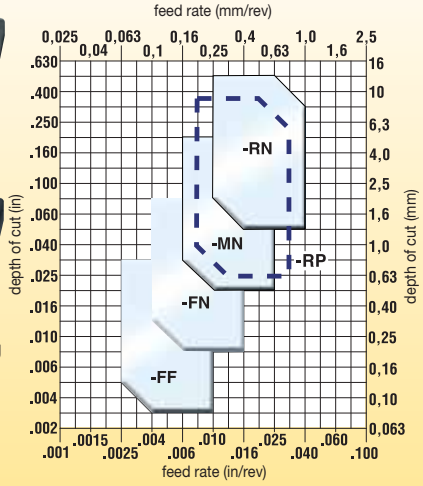
-FN
Finishing



-MN
Medium
Machining



-FF
Fine Finishing



*-RP – Supplemental geometry for high-strength materials

Positive Inserts



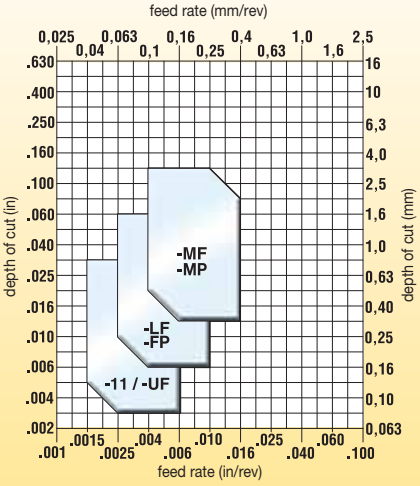
-MF -MP
Positive
Medium Machining



-LF -FP
Positive
Finishing



-11 -UF
Fine Finishing



Step 2 • Select the grade

cutting condition		-FF	-FN	-MN	-RN	-RP	-11	-UF	-LF	-FP	-MF	-MP
heavily interrupted cut		KCP10	KCP25	KCP30	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCU25/KCP25	KCP40	KCM25
lightly interrupted cut		KCP10	KCP25	KCP25	KCP30/KCP40	KCP30/KCP40	—	KC5010/KCP25	KCP25	KCP25	KCP25	KCP25
varying depth of cut, casting, or forging skin		KCP05/KT315	KCP10	KCP10	KCP30/KCP40	KCP30/KCP40	KT315	KCP10	KCP10	KCP10	KCP10	KCP10
smooth cut, pre-turned surface		KCP05/KT315	KCP05	KCP05	KCP30/KCP40	KCP30/KCP40	KT315	KCP05	KCP05/KT315	KCP05/KTP10	KCP05	KCP05

Step 3 • Select the cutting speed

Low-Carbon (<0.3% C) and Free-Machining Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P0/P1	KCP05/KTP10							◁▷			435	1450
	KCP10						◁▷				395	1320
	KCP25				◁▷						275	925
	KCP30/KCP40			◁▷							210	700
	KT315								◁▷		440	1450
	KCU10/KC5010				◁▷						280	925

Medium- and High-Carbon Steels (>0.3% C) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P2	KCP05/KTP10				◁▷						240	800
	KCP10				◁▷						265	880
	KCP25			◁▷							195	650
	KCP30/KCP40			◁▷							150	500
	KT315				◁▷						270	880
	KCU10/KC5010			◁▷							200	650

Alloy Steels and Tool Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P3	KCP05/KTP10			◁▷							205	680
	KCP10			◁▷							190	630
	KCP25		◁▷								155	510
	KCP30/KCP40	◁▷									120	400
	KT315			◁▷							210	680
	KCU10/KC5010		◁▷								155	510

Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	90 (300)	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	m/min	SFM
P4	KCP05/KTP10				◁▷						160	530
	KCP10				◁▷						145	480
	KCP25			◁▷							105	360
	KCP30/KCP40		◁▷								95	325
	KT315				◁▷						210	530
	KCU10/KC5010			◁▷							110	360

Ferritic, Martensitic, and PH Stainless Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	330 (1100)	360 (1200)	m/min	SFM
P5	KCP05/KTP10					◁▷					240	800
	KCP10				◁▷						215	720
	KCP25				◁▷						195	650
	KCP30/KCP40	◁▷									135	450
	KT315					◁▷					250	800
	KCU10/KC5010				◁▷						200	660

Ferritic, Martensitic, and PH Stainless Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	105 (350)	135 (450)	165 (550)	195 (650)	225 (750)	255 (850)	285 (950)	315 (1050)	345 (1150)	m/min	SFM
P6	KCP05/KTP10				◁▷						200	660
	KCP10				◁▷						180	600
	KCP25			◁▷							150	500
	KCP30/KCP40	◁▷									105	350
	KT315				◁▷						200	660
	KCU10/KC5010			◁▷							150	500

Step 1 • Select the insert geometry

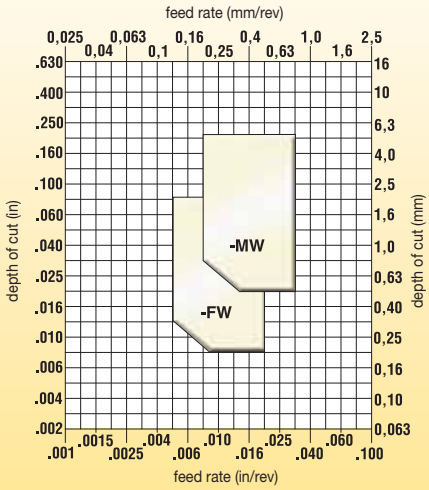
Negative Wiper Inserts



-MW
Medium Wiper



-FW
Finishing Wiper



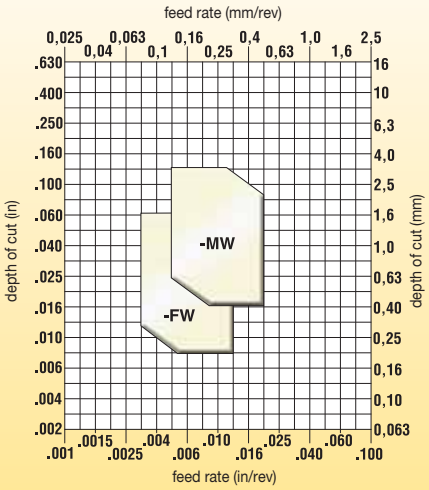
Positive Wiper Inserts



-MW
Medium Wiper



-FW
Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FW	Negative Insert Geometry -MW	Positive Insert Geometry -FW	Positive Insert Geometry -MW
heavily interrupted cut		—	—	—	—
lightly interrupted cut		KCM15	KCM25	KCM15	KCM15
varying depth of cut, casting, or forging skin		KCM15/KCU10/KC5010	KCM15	KCU10/KC5010	KCU10/KC5010
smooth cut, pre-turned surface		KCM15/KT315	KCM15	KT315	KT315

Step 1 • Select the insert geometry

Negative Inserts



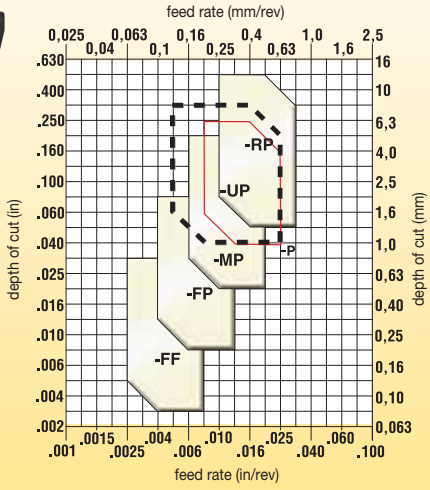
-RP -P
Roughing



-MP -UP
Medium Machining



-FP -FF
Finishing



Positive Inserts



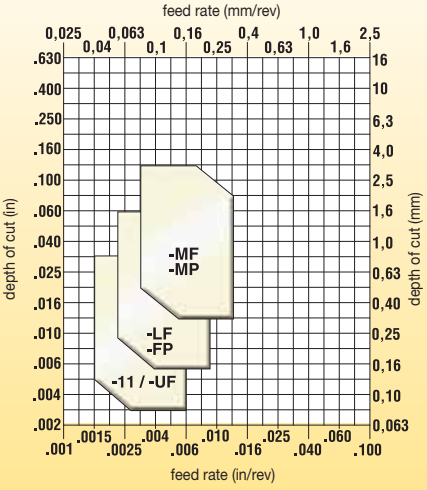
-MP
Medium Machining



-LF ..GT-LF
Finishing



-11 -UF
Fine Finishing



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -FF	-FP	-MP/-UP	-P/-RP
heavily interrupted cut		KCU10/KC5010	KCM15	KCM35	KCM35
lightly interrupted cut		KCU10/KC5010	KCM15	KCM25	KCM25
varying depth of cut, casting, or forging skin		KT315	KCM15/KC5010	KCM15	KCM15/KCM25
smooth cut, pre-turned surface		KT315	KCM15/KT315	KCM15/KU10	KCU10

(continued)

Step 2 • Select the grade *(continued)*

cutting condition		Positive Insert Geometry -11	-UF	-LF	-MP/-MF	-FP
heavily interrupted cut		—	KCU25/KC5025	KCM35	KCM25	KCU25/KCM25
lightly interrupted cut		—	KCU10/KC5010	KCM25	KCM25	KCM15
varying depth of cut, casting, or forging skin		KT315	—	KCM15/KCU10	KCM15	KCU10
smooth cut, pre-turned surface		KT315	—	KCM15/KT315	KCM15	KTP10

Step 3 • Select the cutting speed

Austenitic Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M1	KCM15			◁▷							180	600
	KCM25			◁▷							150	500
	KCM35		◁▷								120	400
	KT315				◁▷						230	750
	KCU10/KC5010				◁▷						215	700
	KCU25/KC5025			◁▷							180	550

Austenitic Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M2	KCM15			◁▷							165	550
	KCM25		◁▷								140	450
	KCM35	◁▷									105	350
	KT315				◁▷						215	700
	KCU10/KC5010			◁▷							200	650
	KCU25/KC5025		◁▷								165	500

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M3	KCM15		◁▷								150	500
	KCM25		◁▷								120	400
	KCM35	◁▷									90	300
	KT315			◁▷							200	650
	KCU10/KC5010			◁▷							185	600
	KCU25/KC5025		◁▷								150	450

Step 1 • Select the insert geometry

Negative Wiper Inserts



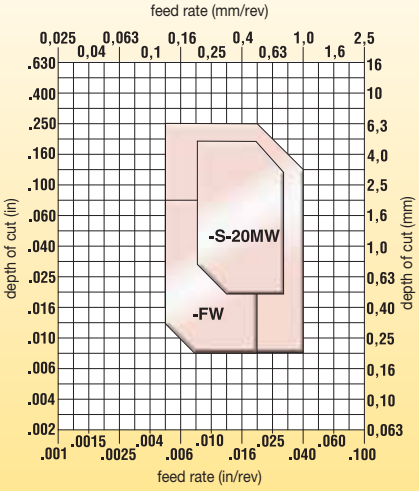
-MW -S...MW

Medium Wiper



-FW -FW -T-20FW

-FW -T-20FW Finishing Wiper



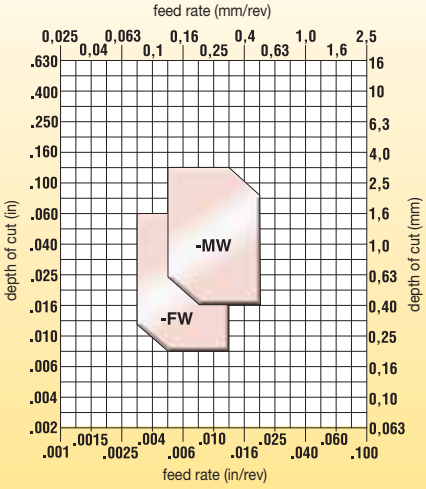
Positive Wiper Inserts



..MW Medium Wiper



-FW Finishing Wiper



Step 2 • Select the grade

Gray Iron

cutting condition	Negative Insert Geometry			Positive Insert Geometry	
	-FW	-T-20FW	-S...MW...	-FW	-MW
heavily interrupted cut	—	KY3500	KB1345	—	KCK20
lightly interrupted cut	KCK15	KY3500	KB1345	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCK05/KT315	KYK10	KB1345	KCK20	KCK20
smooth cut, pre-turned surface	KCK05/KT315	KYK25	KB1345	KCK20/KT315	KT315/KCK20

Ductile Iron

cutting condition	Negative Insert Geometry		Positive Insert Geometry	
	-FW	-T-20FW-	-FW	-MW
heavily interrupted cut	—	—	—	—
lightly interrupted cut	KCK15	KY3500	KCK20	KCK20
varying depth of cut casting, or forging skin	KCK05/KT315	KYK10	KCK20	KCK20
smooth cut, pre-turned surface	KCK05/KT315	KYK25	KCK20/KT315	KCK20/KT315

Step 3 • Select the cutting speed

Gray Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K1	KCK05				◁▷						450	1500
	KCK15				◁▷						360	1200
	KCK20				◁▷						300	1000
	KT315				◁▷						275	900

Ductile, Compacted Graphite, and Malleable Cast Irons (<80 KSI tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K2	KCK05				◁▷						360	1200
	KCK15				◁▷						270	900
	KCK20				◁▷						240	800
	KT315				◁▷						275	900

Ductile, Compacted Graphite, and Malleable Cast Irons (>80 KSI tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

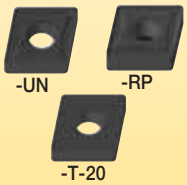
material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K3	KCK05			◁▷							240	800
	KCK15			◁▷							215	725
	KCK20			◁▷							210	700
	KT315			◁▷							230	750

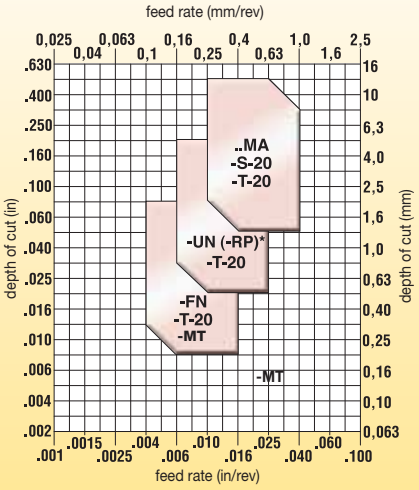
Step 1 • Select the insert geometry

Negative Inserts











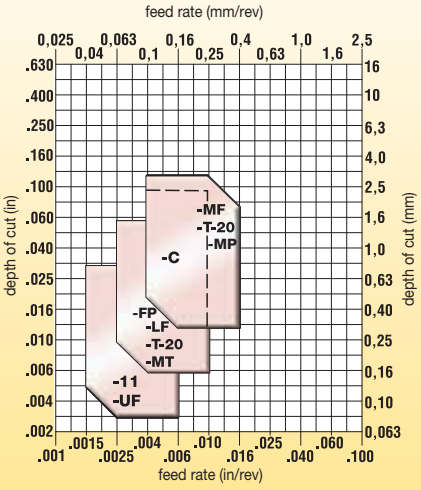
Positive Inserts

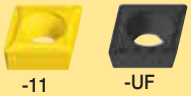












* Geometry can be used in medium machining operations to reduce tool pressure in high-strength metals.

Step 2 • Select the grade

Carbide Grades

Gray Iron

cutting condition		Negative Insert Geometry -FN	-UN(-RP)	-MA	Positive Insert Geometry -LF	-FP	-MF	-MP	-MW
heavily interrupted cut		KCK15	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20
lightly interrupted cut		KCK15	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20	KCK20
varying depth of cut, casting, or forging skin		KCK05/KT315	KCK15	KCK15	KCK15	KCK20	KCK15	KCK20	KCK20
smooth cut, pre-turned surface		KCK05/KT315	KCK05	KCK05	KCK05	KCK20	KCK15	KCK20	KCK20

Ductile Iron

cutting condition	Negative Insert Geometry -FN	-UN(-RP)	-MA
heavily interrupted cut	KCK15	KCK20	KCK20
lightly interrupted cut	KCK15	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCK05/KT315	KCK15	KCK15
smooth cut, pre-turned surface	KCK05/KT315	KCK05	KCK05

cutting condition	Positive Insert Geometry -11/-UF	-LF	-MF	-FP	-MP	-MW
heavily interrupted cut	—	KCK20	KCK20	KCK20	KCK20	KCK20
lightly interrupted cut	KCU10/KC5010	KCK20	KCK20	KCK20	KCK20	KCK20
varying depth of cut, casting, or forging skin	KCU10/KC5010	KCK15	KCK15	KCK20	KCK20	KCK20
smooth cut, pre-turned surface	KT315	KCU10/KC5010	KCK15	KCK20	KCK20	KCK20

(continued)

Step 2 • Select the grade *(continued)*

Ceramic and PCBN Grades

Gray Iron

cutting condition	Negative Insert Geometry -T-20 Finishing	-T-20 MT	-T-20 Medium	-T-20 Roughing	-S20
heavily interrupted cut	KY3500	KCK20	KY3500	KY3500	KB1340
lightly interrupted cut	KY3500	KB1345	KYK10	KY3500	KB1340
varying depth of cut, casting, or forging skin	KYK10	KB1345	KYK10	KYK10	KB1340
smooth cut, pre-turned surface	KYK25	KB1345	KYK25	KYK25	KB1340

cutting condition	Positive Insert Geometry -T-20 Fine Finishing	-T-20 Medium	MT	C
heavily interrupted cut	—	KY3500	KB1630/KB1345	KB1630/KB1345
lightly interrupted cut	—	KY3500	KB1630/KB1345	KB1630/KB1345
varying depth of cut, casting, or forging skin	KY3500	KY3500	KB1630/KB1345	KB1630/KB1345
smooth cut, pre-turned surface	KY3500	KY3500	KB1630/KB1345	KB1630/KB1345

Ductile Iron

cutting condition	Negative Insert Geometry -T-20 Finishing	-T-20 Medium	-T-20 Roughing	Positive Insert Geometry -T-20 Fine Finishing	-T-20 Finishing	-T-20 Medium
heavily interrupted cut	—	KY3500	KY3500	—	KY3500	KY3500
lightly interrupted cut	—	KYK25	KYK25	—	KYK25	KYK25
varying depth of cut, casting, or forging skin	KYK25	KYK25	KYK25	KYK25	KYK25	KYK25
smooth cut, pre-turned surface	KYK25	KYK25	KYK25	KYK25	KYK25	KYK25

Step 3 • Select the cutting speed (Optimal speed depends on casting quality and disposition.)

Gray Cast Iron — speed — m/min (SFM) — starting conditions

material group	grade	60 (200)	180 (600)	305 (1000)	430 (1400)	550 (1800)	675 (2200)	800 (2600)	920 (3000)	1040 (3400)	1160 (3800)	m/min	SFM
K1	KT315											275	900
	KB1340/KB1345											760	2500
	KYK25											760	2500
	KY3500											760	2500
	KYK10											760	2500
	KCK05											450	1500
	KCK15											360	1200
	KCK20											300	1000

Ductile, Compacted Graphite, and Malleable Cast Irons (<600 MPa tensile strength) — speed — m/min (SFM) — starting conditions

material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	500 (1650)	550 (1800)	600 (1950)	m/min	SFM
K2	KT315													275	900
	KCU10/KC5010													200	650
	KYK25													430	1400
	KY3500													365	1200
	KYK10													365	1200
	KCK05													360	1200
	KCK15													270	900
	KCK20													240	800

Ductile, Malleable, and Austempered Cast Irons (>600 MPa tensile strength) — speed — m/min (SFM) — starting conditions

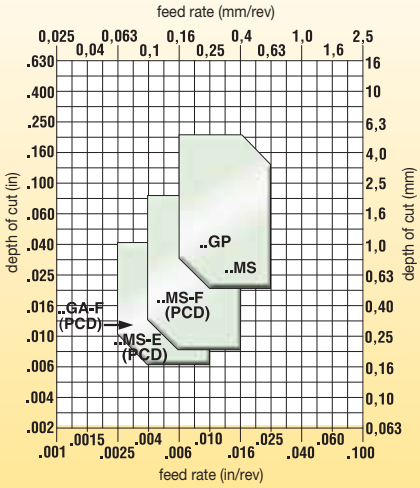
material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	500 (1650)	550 (1800)	600 (1950)	m/min	SFM
K3	KT315													230	750
	KCU10/KC5010													150	500
	KYK25													365	1200
	KCK05													240	800
	KCK15													215	725
	KCK20													210	700

Step 1 • Select the insert geometry

beyond

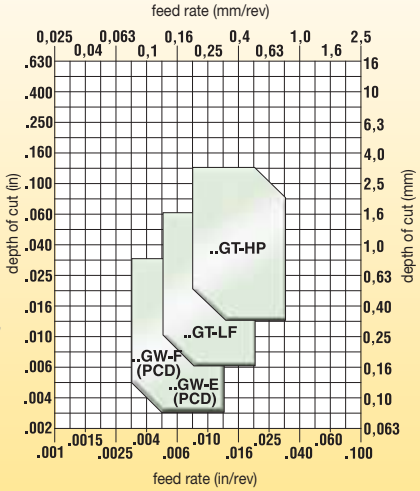
Negative Wiper Inserts





Positive Wiper Inserts





Step 2 • Select the grade

		Negative Insert Geometry					Positive Insert Geometry			
cutting condition		..GA-E (PCD)	..MS-E (PCD)	..GA-F (PCD)	..GP	..MS	..GW-E (PCD)	..GW-F (PCD)	..GT-LF	..GT-HP
heavily interrupted cut		—	—	KD1400	KC5410/K313	KC5410	—	KD1400	—	KC5410
lightly interrupted cut		KD1405	KD1405	KD1400	KC5410/K313	KC5410	KD1405	KD1400	KC5410	KC5410
varying depth of cut, casting, or forging skin		KD1405	KD1405	KD1425	KC5410/K313	KC5410	KD1405	KD1425	KC5410	KC5410
smooth cut, pre-turned surface		KD1405	KD1405	KD1425	KC5410/K313	KC5410	KD1405	KD1425	KC5410	KC5410

Step 3 • Select the cutting speed

Low-Silicon Aluminum Alloys
(hypoeutectic <12.2% Si) and Magnesium Alloys

speed — m/min (SFM)

starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	2250 (7200)	2500 (8000)	m/min	SFM
N2	KC5410		◁▷									550	1800
	KD1400			◁▷								765	2500

High-Silicon Aluminum Alloys
(hypereutectic >12.2% Si) and Magnesium Alloys

speed — m/min (SFM)

starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N3	KD1405		◁▷			580	2000
	KD1425			◁▷		520	1700

Additional Cutting Speed Recommendations for Miscellaneous Workpiece Materials

Copper-, Brass-, Zinc-Based on a Machinability Index Range of 70–100 — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N4	KD1400/ KD1405		◁▷			520	1700
	KD1425		◁▷			500	1600
	KC5410	◁▷				275	900
	K313	◁▷				260	850

Nylon, Plastics, Rubbers, Phenolics, Resins, Fiberglass, and Glass — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N5	KD1400/ KD1405		◁▷			400	1300
	KD1425	◁▷				365	1200
	KC5410	◁▷				170	550

Carbon and Graphite Composites: Brush Alloys, Kevlar, and Graphite (280–400 HB) (30–43 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N6	KD1400/ KD1405			◁▷		760	2500
	KC5410	◁▷				200	650

MMCs (Aluminum-Based Metal Matrix Composites) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N7	KD1405		◁▷			460	1500
	KD1400		◁▷			365	1200

Tin Alloys, Cast: ASTM 823, Alloys 1, 2, 3, 11 — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	m/min	SFM
N	KC5410	◁▷				215	700
	K313	◁▷				180	600

Step 1 • Select the insert geometry

Negative Inserts



-RP
Roughing



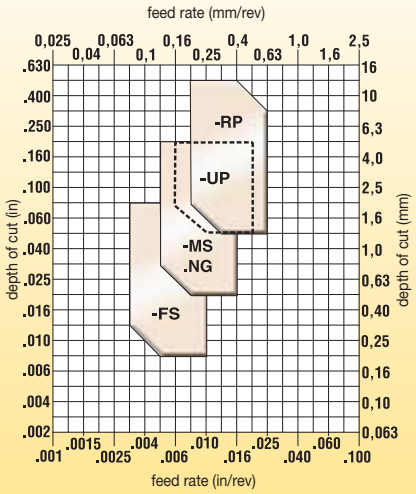
-MS .NG



-UP
Medium Machining



-FS
Finishing



Positive Inserts



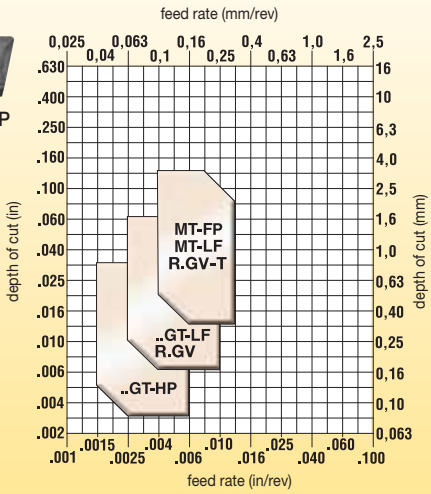
MT-LF R.GV-T MT-FP
Medium Machining



..GT-LF R.GV



..GT-HP
Fine Finishing



Step 2 • Select the grade

	Negative Insert Geometry				
cutting condition	**-FS**	**.NG**	**-MS**	**-UP**	**-RP**
heavily interrupted cut	KCU25/KC5525	—	KCU25/KC5525	KCM35	KCM25/KCM35
lightly interrupted cut	KCU10/KC5510	KYS30/KY1540	KCU25/KC5525	KCM25	KCM15KC5525
varying depth of cut, casting, or forging skin	KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300	KCU10/KC5510	KCM15	KCU25/KC5525
smooth cut, pre-turned surface	KCU10/KC5510/ K313	KYS25/KY4300	KCU10/KC5510 K313	KCU10/KC5510	KCU10/KC5510

	Positive Insert Geometry					
cutting condition	**-FP**	**..GT-HP**	**MT-LF**	**R.GV-T**	**..GT-LF**	**R.GV**
heavily interrupted cut	KCU25	—	KCU25/KC5025	—	KCU25/KC5025	—
lightly interrupted cut	KCU25	KCU25/KC5025	KCU25/KC5025	KYS30/KY1540	KCU25/KC5025	KYS30/KY1540
varying depth of cut, casting, or forging skin	KCU10/KU10	KCU10/KC5510	KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300	KCU10/KC5510	KYS30/KY1540/ KYS25/KY4300
smooth cut, pre-turned surface	KCU10/KU10	KCU10/KC5510 K313	KCU10/KC5510 K313	KYS25/KY4300	KCU10/KC5510 K313	KYS25/KY4300

Step 3 • Select the cutting speed

Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S1	K313/KU10		◁▷												30	100
	KCU10/KC5510/KC5010			◁▷											55	180
	KCU25/KC5525/KC5025		◁▷												40	125
	KYS25/KY4300							◁▷							200	650
	KYS30/KY1540						◁▷								170	550
	KCM15			◁▷											55	180
	KCM25/KCM35		◁▷												40	125

Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S2	K313/KU10		◁▷												35	110
	KC5510/KC5010			◁▷											60	195
	KC5525/KC5025		◁▷												30	100
	KYS25/KY4300							◁▷							220	720
	KYS30/KY1540						◁▷								185	600
	KCM15			◁▷											60	195
	KCM25/KCM35		◁▷												30	100

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S3	K313/KU10		◁▷												40	125
	KCU10/KC5510/KC5010			◁▷											70	225
	KCU25/KC5525/KC5025		◁▷												40	125
	KYS25/KY4300							◁▷							250	820
	KYS30/KY1540							◁▷							215	700
	KCM15			◁▷											70	225
	KCM25/KCM35		◁▷												40	125

Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	290 (950)	310 (1050)	350 (1150)	380 (1250)	m/min	SFM
S4	K313/KU10		◁▷												45	150
	KC5510/KC5010/KC9225			◁▷											70	225
	KC5525/KC50225/KC9240		◁▷												55	175
	KCM15			◁▷											70	225
	KCM25/KCM35			◁▷											55	175

Step 1 • Select the insert geometry

Negative Wiper Inserts



-S..MWMT
(multitipped)
Medium Wiper

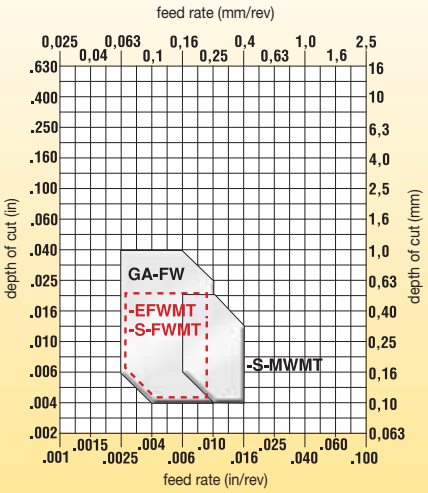


-EFWMT
(multitipped)





-S..FWMT (multitipped) GA-FW
Finishing Wiper



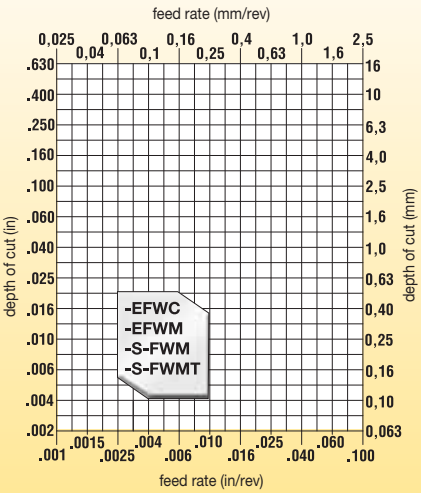
Positive Wiper Inserts



-EFWC (full face)
-EFWM (single tipped)
Finishing Wiper



-S..FWM
(single tipped)
-S..FWMT
(multitipped)
Fine Finishing Wiper



Step 2 • Select the grade

cutting condition		Negative Insert Geometry GA-FW	-S..FWMT	-EFWMT	Positive Insert Geometry -S..FWM -S..FWMT	-EFWC -EFWM
heavily interrupted cut		—	KB5630	KB1625	—	—	—
lightly interrupted cut		—	KB1610/KB5610	KB5625	KB5610	KB1610	KB5610
varying depth of cut, casting, or forging skin		KY4400	KB1610/KB5610	KB1610/KB5610	KB5610	KB1610	KB5610
smooth cut, pre-turned surface		KY4400	KB5610	KB5610	KB5610	KB5610	KB5610

Step 1 • Select the insert geometry

Negative Inserts



-S-20
Medium Machining

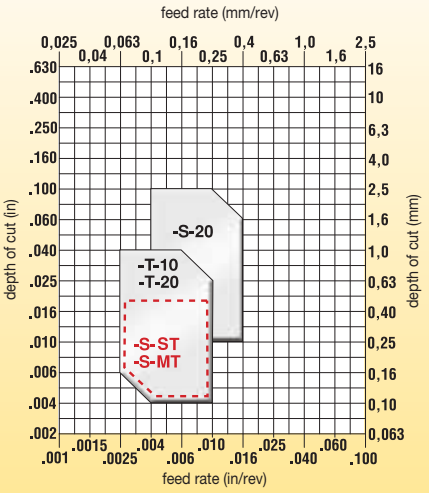


-S..ST (single tipped)
-S..MT (multitipped)
Finishing





-T..10 -T.10
-T.20 -T.20
Fine Finishing



Positive Inserts



-T-15
Medium Machining

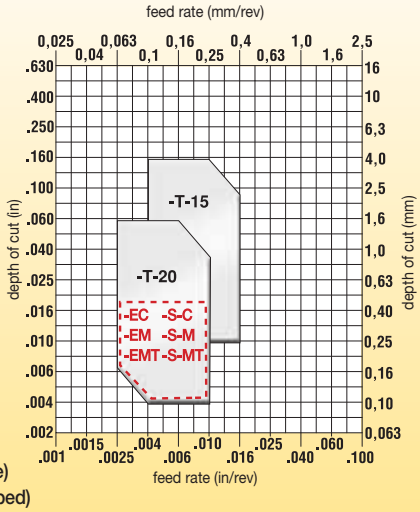


-EC (full-face)
-EM (single tipped)
-EMT (multitipped)
Finishing





-T-20 -S....C (full face)
-S....M (single tipped)
-S....MT (multitipped)
Fine Finishing

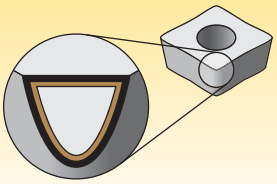


Step 2 • Select the grade

cutting condition		Negative Insert Geometry -T.10 -T.20	-S..ST -S..MT	-S-20	Positive Insert Geometry -S..C/-S..M -S..MT	-T-20	-EC/-EM -EMT	-T-15
heavily interrupted cut		—	KB1630/KB5630	KB1340	KB1630/KB5630	—	KB1630/KB5630	—
lightly interrupted cut		—	KB1625/KB5625	KB1340	KB1625/KB5625	KY4400	KB1625/KB5625	KY1615
varying depth of cut, casting, or forging skin		KY1615/KY4400	KB1625/KB5625	—	KB1625/KB5625	KY4400	KB1625/KB5625	KY1615
smooth cut, pre-turned surface		KY1615/KY4400	KB1610/KB5610	—	KB1610/KB5610	KY4400	KB1610/KB5610	KY1615

Step 3 • Select the cutting speed

material group	grade	speed — m/min (SFM) 15 (50)	45 (150)	75 (250)	110 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	starting conditions m/min	SFM
H1	KY4400					◁▷					135	450
	KY1615				◁▷						100	325
	KB1610					◁▷					140	460
	KB1625				◁▷						110	360
	KB1630			◁▷							90	295
	KB5610					◁▷					150	490
	KB5625				◁▷						120	400
	KB5630			◁▷							105	345

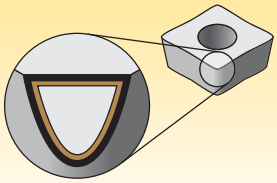


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

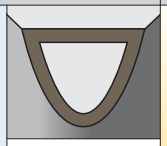
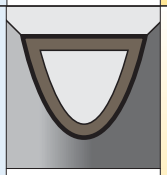
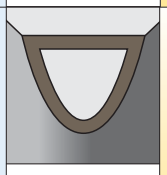
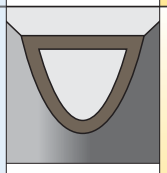
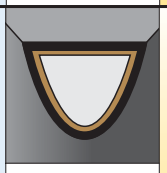
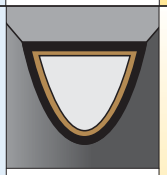
	Coating	Grade Description	05 10 15 20 25 30 35 40 45
Uncoated Carbide Grades	**KU10** C3	**Composition:** A hard, low binder content, WC/Co fine-grain grade. **Application:** The KU10 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temperature alloys. Use as a general-purpose grade for non-ferrous materials. beyond	M K N S
	K313 C3–C4	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temp 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.	M K N S
	K68 C3	**Composition:** A hard, low binder content, alloyed grade WC/Co fine-grain grade. **Application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and as an alternative to the K313 grade on most high-temperature alloys. Use as a general-purpose grade for non-ferrous materials.	M K N S
PVD-Coated Carbide Grades	**KCU10** C3–C4	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10 grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability. beyond	P M K N S H
	KCU25 C2, C6	**Composition:** An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25 grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials in a wide range of speeds and feeds with improved edge toughness for interrupted cut and high feed rates. beyond	P M K N S
	KC5010 C3–C4	**Composition:** An advanced PVD AlTin coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating enables speeds to be increased by 50–100%. **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

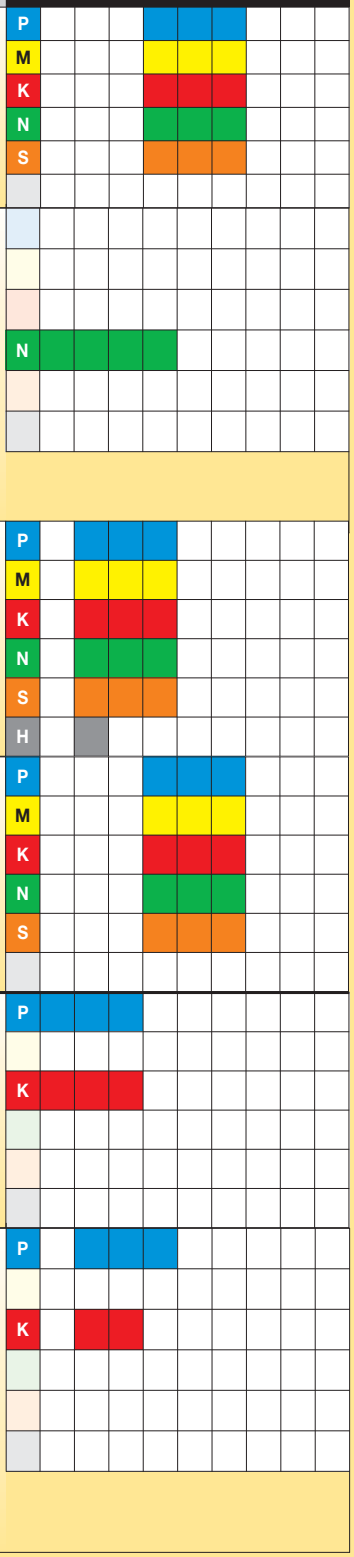


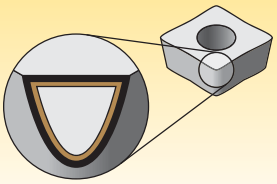
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

	Coating	Grade Description
PVD-Coated Carbide Grades	**KC5025**  C2, C6	**Composition:** An advanced PVD-AlTin-coated grade with a tough, fine-grain unalloyed substrate. **Application:** For general-purpose machining of most steels, stainless steels, high-temp alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium and will handle interruptions and high feed rates.
	KC5410  C3–C4	**Composition:** A PVD TiB_2 coating over a very deformation-resistant unalloyed substrate. **Application:** Designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys, and magnesium alloys. The TiB_2 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. 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.
	KC5510  C3–C4	**Composition:** An advanced PVD AlTin-coated fine-grain tungsten carbide grade. **Application:** The KC5510 grade is specifically engineered for the productive machining of high-temp alloys. The fine-grain tungsten carbide 6% cobalt substrate has excellent toughness and deformation resistance while the advanced PVD coating enables metalcutting speeds double those of conventional PVD-coated cutting tools.
	KC5525  C2–C6	**Composition:** Advanced PVD AlTin-coated fine-grain high-cobalt carbide grade. **Application:** The KC5525 grade utilizes the same advanced PVD coating as the KC5510 grade in conjunction with a fine-grained tungsten carbide 10% cobalt substrate. The higher cobalt enables 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-temp alloys.
CVD-Coated Carbide Grades	**KCP05**  C3–C4	**Composition:** An innovative, highly deformation-resistant, cobalt-enriched substrate with a specially designed, adherent MTCVD-TiCN-Al_2O_3 coating. **Application:** For finishing to semi-finishing of most steels, ferritic, martensitic, and PH stainless steels and cast irons. Provides excellent combination of deformation resistance and insert edge strength. The new coating combined with a state-of-the-art post-coat treatment provides high-productivity with long predictable tool life and superior workpiece surface finish. beyond
	KCP10  C3, C7	**Composition:** A specially engineered cobalt-enriched carbide grade with thick MTCVD-TiCN-Al_2O_3 coating for maximum wear resistance. **Application:** An excellent finishing to medium machining grade for a variety of workpiece materials, including most steels, ferritic, martensitic, and PH stainless steels, and cast irons. The 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. Smooth coating provides resistance to edge build-up and microchipping and produces excellent surface finishes. beyond



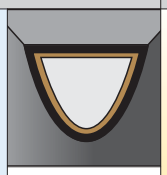
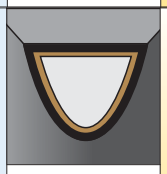
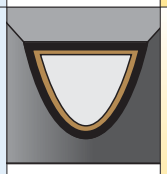
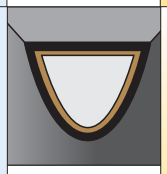
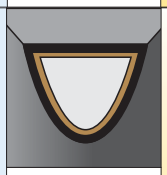
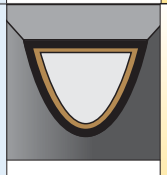


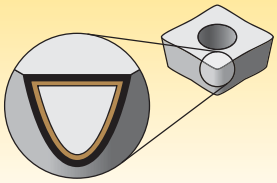
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wear resistance ⟷ toughness

CVD-Coated Carbide Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KCP25  C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer MTCVD-TiCN-Al_2O_3 coating with superior interlayer adhesion. **Application:** Best general-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance with excellent insert edge strength. Coating layers offer good wear resistance over a wide range of machining conditions and the post-coat treatment minimizes microchipping and improves coating adhesion to substrate leading to long tool life and improved workpiece finishes. beyond	P								
		K								
KCP30  C5–C6	**Composition:** A newly engineered, tough cobalt-enriched carbide grade with an advanced multilayer TiN-MT-TiCN-Al_2O_3 coating. **Application:** For medium to rough machining of all carbon, alloy, and stainless steels. The substrate design provides superior insert strength that is required for this application, and the multilayer coating adds wear resistance to the insert resulting in long tool life. beyond	P								
KCP40  C5–C6	**Composition:** A tough carbide grade with a moderately thick TiN-MT-TiCN-Al_2O_3 coating. **Application:** For heavy roughing of carbon, alloy, and stainless steels. The substrate-coating combination provides unbelievable toughness and operational security allowing high metal removal rates even in most demanding interrupted cuts. beyond	P								
		M								
KCK05  C3–C4	**Composition:** A multilayered coating with moderately thick MTCVD TiCN-Al_2O_3 layers over a highly deformation-resistant carbide substrate. **Application:** Designed for high-speed machining of gray and ductile irons. The substrate and coating architecture together with CW5 post-coat treatment ensure a tremendous tool life advantage, especially when cutting higher tensile strength ductile and gray irons where workpiece size consistency and reliability of tool life are critical. Excellent both in straight and varied depths of cut. beyond	P								
		K								
KCK15  C3–C4	**Composition:** A multilayered coating with thick MTCVD TiCN-Al_2O_3 layers applied over a carbide substrate specifically engineered for cast irons. **Application:** Delivers consistent performance in high-speed machining of gray and ductile irons. The substrate design permits the insert to stay in the cut for a long time at high speeds with minimum deformation. The thick CVD coating and post-coat treatment provide superior wear resistance ensuring long and consistent tool life. Can be applied both in straight and lightly interrupted cuts. beyond	P								
		K								
KCK20  C2–C3	**Composition:** A specially toughened MTCVD-TICN-Al_2O_3 coating over a wear-resistant substrate. **Application:** The KCK20 grade is specifically engineered to maximize coating adhesion and edge strength making this grade ideal in wet interrupted cutting of gray and ductile irons. It can be used in a wide range of applications from finishing to roughing to maximize productivity wherever strength and reliability are needed. beyond	P								
		K								

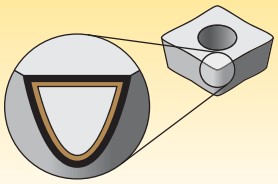


Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
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H	Hardened Materials

wear resistance ⟷ toughness

	Coating	Grade Description	05	10	15	20	25	30	35	40	45
CVD-Coated Carbide Grades	KCM15 C2–C3	**Composition:** A multilayer MTCVD-TiCN-Al_2O_3 coated carbide grade. **Application:** An excellent finishing to medium machining grade for austenitic stainless steels at higher speeds and covers a broad range of steel applications in the P20–25 range. KCM15 grade in combination with unique geometries have been designed to resist depth-of-cut notching and minimize burr formation. The post-coat treatment reduces coating stresses, improves coating adhesion, minimizes microchipping and edge build-up, and improves workpiece finish. beyond									
	KCM25 C1–C2	**Composition:** A multilayer CVD coating comprised of TiN-MT-TiCN-Al_2O_3 layers over a tough, cobalt-enriched carbide substrate. **Application:** This CVD-coated grade is designed for general-purpose machining of austenitic stainless steels at moderate speeds and feeds. KCM25 inserts offer an extraordinary combination of toughness, built-up edge resistance, and wear resistance in stainless steel applications. beyond									
	KCM35 C1–C2	**Composition:** A multilayer TiN-MT-TiCN-Al_2O_3 CVD coating over a super-tough substrate. **Application:** The KCM35 grade is engineered to take on the most brutal cast stainless steel machining applications. The substrate withstands heavy interruptions, while the coating provides the wear resistance needed for long tool life. The polished surface resists edge build-up, even at slow cutting speeds. KCM35 grade is available in insert sizes and geometries appropriate for heavy feeds and large depths of cut. beyond									
PVD-Coated Cermet Grades	KT315 C3, C7	**Composition:** A multilayer 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.									
	KTP10 C3, C7	**Composition:** A multilayer, 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.									

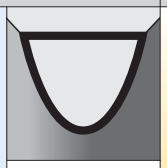
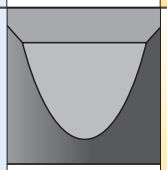
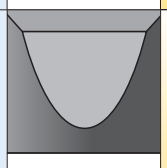
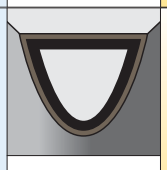


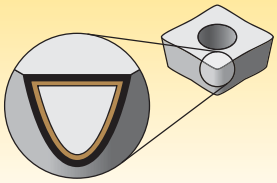
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

Ceramic Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KYS25  C4	**Composition:** SiAlON ceramic with a multi-layered alumina-TiCN CVD coating. **Application:** Compliments the KYS30 grade when machining high-temp and nickel-based alloys and cast materials with high Brinell hardness. This advanced CVD coating provides excellent chemical and depth-of-cut notch resistance compared to whisker ceramics. beyond									
KYS30  C4	**Composition:** Latest and most advanced sialon material developed. **Application:** Combines excellent wear properties, fracture toughness, and thermal shock resistance for general-purpose to finish machining of high-temp alloys. Provides superior depth-of-cut notch resistance compared to whisker ceramics. beyond									
KYK10  —	**Composition:** An advanced sialon ceramic grade. **Application:** Provides maximum wear resistance. Use for high-speed continuous turning of gray cast iron, including through scale. beyond									
KYK25  C3	**Composition:** Pure silicon nitride ceramic with an alumina CVD coating. **Application:** Excellent combination of toughness and edge wear resistance. Used for general-purpose machining of gray, ductile, or nodular cast irons. beyond									



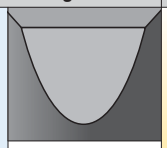
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

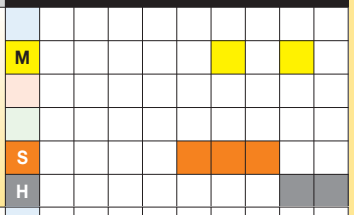
Ceramic Grades

KY4300

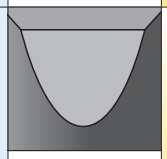


Coating: C4

Composition: Whisker ceramic with a matrix of Al_2O_3 + SiCW.
Application: The SiC whiskers embedded in the micro structure give this ceramic excellent toughness for cutting high-temp alloys and cast materials with high Brinell hardness.

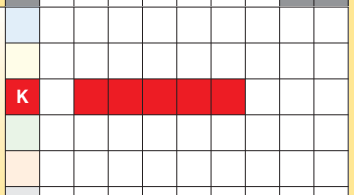


KY3500

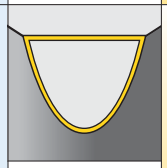


Coating: C2

Composition: Pure silicon nitride grade.
Application: Maximum toughness. Used at high-feed rates for rough machining of gray cast iron, including machining through interruptions.

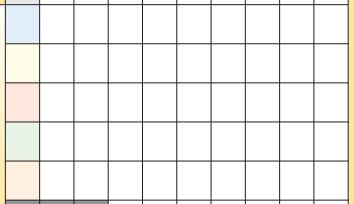


KY4400



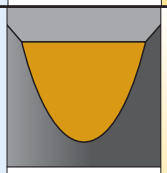
Coating: C4, C8

Composition: A PVD TiN coating over an aluminum oxide and titanium carbonitride composite 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 depths of cut. Can also be applied in finish turning of nickel alloys, cobalt alloys, and powder metals.



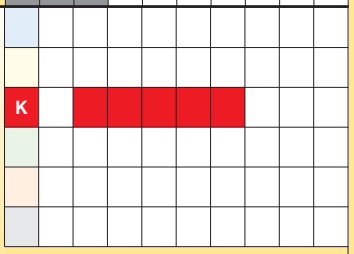
PCBN – Polycrystalline Cubic Born Nitride Grades

KB1340

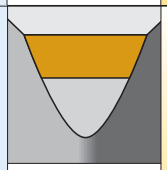


Coating: —

Composition: A high CBN content, solid PCBN insert having multiple cutting edges.
Application: Applied in roughing to finishing of fully pearlitic gray cast iron, chilled irons, high-chrome alloyed steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. The solid PCBN insert offers better security and shock resistance compared to tipped PCBN inserts, while also enabling deeper depth-of-cut capabilities.

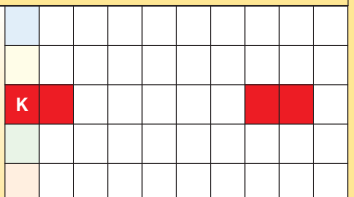


KB1345

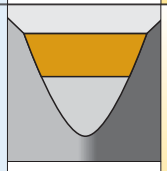


Coating: —

Composition: A high CBN content, PCBN tip brazed onto a carbide insert.
Application: Applied in roughing to finishing of fully pearlitic gray cast iron, chilled irons, high-chrome alloyed steels, sintered powdered metals, and heavy cuts in hardened steels (>45 HRC). Also use for finishing chilled cast iron and fully pearlitic cast iron. The tipped PCBN insert is available in a wide range of insert styles including positive rake geometries that are ideally suited for boring applications.

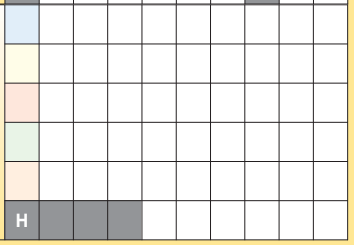


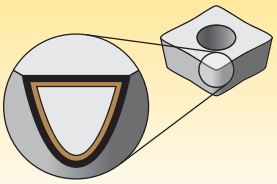
KB1610



Coating: —

Composition: A low CBN content, PCBN tip brazed onto a carbide insert.
Application: Designed for precision finishing in smooth cuts on hardened steels (>45 HRC) where optimal surface finish is needed. 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. Do not apply on soft steel.



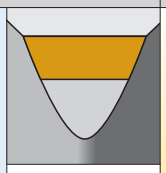
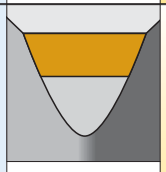
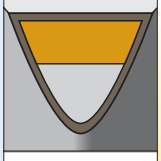
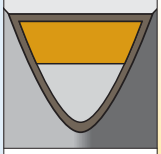
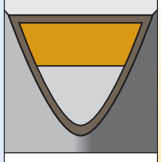


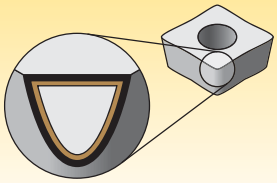
Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

wear resistance ⟷ toughness

PCBN – Polycrystalline Cubic Born Nitride Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KB1625  —	**Composition:** A medium CBN content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing of hardened steels (>45 HRC) where optimal surface finish is needed. It can be used in continuous to interrupted cutting of bearing steel, hot and cold work tool steels, high-speed steels, die steels, case-hardened steels, carburized and nitrided irons, and some hard coatings.									
KB1630  —	**Composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **Application:** Designed for roughing to finishing in interrupted cuts on hardened steels (>45 HRC). It can also be applied on gray cast iron, chilled irons, high-chrome alloyed steels and sintered powdered metals. The tipped PCBN insert is available in a wide range of insert styles, including positive rake geometries, that are ideally suited for boring applications.									
KB5610  C4, C8	**Composition:** A low content PCBN grade with a PVD TiAlN coating for added wear resistance. **Application:** Designed for the precision machining of hardened steels (>45 HRC). The PVD coating offers improved wear resistance and excellent surface finish capabilities. It can be 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. Available in a multitip format with a tremendous breadth of edge preps, insert styles, and wiper geometries.									
KB5625  C4, C8	**Composition:** A PVD TiAlN coating over a medium 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.									
KB5630  C4, C8	**Composition:** A high content PCBN grade with a PVD AlTiN coating for added wear resistance. **Application:** Designed for roughing to finishing in hardened steels (>45 HRC), abrasive workpiece materials such as sintered valve seat materials, powder metallurgy tool steels, and hard high-alloy cast irons. The PVD coating provides resistance to crater wear and increased resistance to chipping. The tipped PCBN insert is available in a wide range of insert styles, including positive rake geometries, that are ideally suited for boring applications.									



Coatings provide high-speed capability and are engineered for finishing to heavy roughing.

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

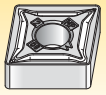
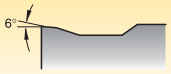
wear resistance ⟷ toughness

PCD – Polycrystalline Diamond Grades

Coating	Grade Description	05	10	15	20	25	30	35	40	45
KD1400	**Composition:** An ultra-fine-grain, polycrystalline diamond (PCD) tip brazed onto a carbide substrate. **Application:** Designed for general-purpose turning of primarily non-ferrous materials. It can be applied over a wide range of continuous to interrupted cuts where superior surface finish is needed. Use on low to medium silicon-content aluminum alloys, non-metallics, copper, and brass- and zinc-based alloys. The ultra-fine-grain diamond particle size enables superior surface finishes while ensuring the best mechanical shock resistance of any PCD cutting tool.	N, S	N, S	N, S						
KD1405	**Composition:** A pure CVD-deposited diamond-sheet tool brazed directly to a carbide substrate. **Application:** KD1405 is Kennametal's most abrasion-resistant tool material for non-ferrous and non-metallic materials. Best applied when abrasion resistance is the desired benefit.	N, S	N, S	N						
KD1425	**Composition:** A multimodal PCD grade with a range of grain sizes brazed onto a carbide substrate. **Application:** Engineered for extreme abrasion resistance, combined with good edge strength for demanding applications. An ideal choice for high-silicon aluminum alloys, bi-metallic (AL/GCI) materials, MMC, carbon-fiber reinforced plastics, and other abrasive non-metallic materials.	N	N	N	N					

Select the geometry — based on feed rate and depth of cut

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

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

.006–.020 (0,2–0,5)

.030–.200 (0,8–5,1)

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

Pictorial View of Insert

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

Primary Workpiece Material Group

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

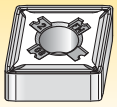
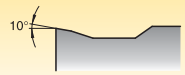
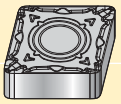
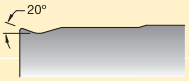
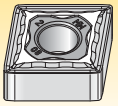
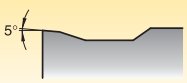
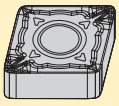
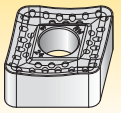
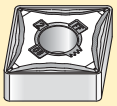
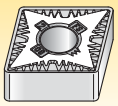
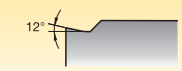
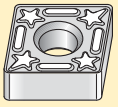
Chip Control Geometry Designation —
example: MG-MP = CNMG-432MP

Machining Operation —
for what the insert geometry is designed

NOTE: For detailed grade and geometry recommendations, reference the Kennametal Beyond™ Selection System on pages B8–B23.

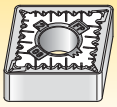
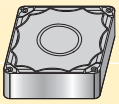
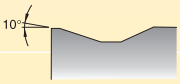
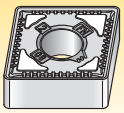
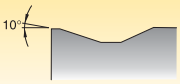
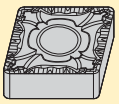
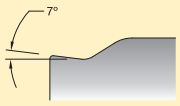
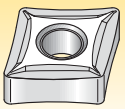
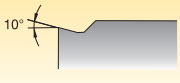
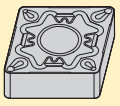
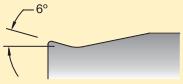
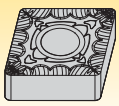
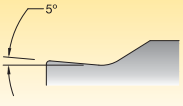
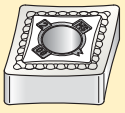
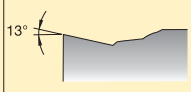
Select the geometry — based on feed rate and depth of cut

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

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
wiper finishing	**MG-FW**			.0015 (0,04) .0025 (0,063) .004 (0,01) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .200 (5,0) .004 (0,1) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .160 (4,0) .250 (6,3) .500 (10,0) .008–.016 (0,2–0,4) .010–.080 (0,3–2,0)
	MG-FW1			.004–.016 (0,1–1,5) .004–.060 (0,1–1,5)
wiper medium machining	**MG-MW**			.012–.024 (0,3–0,6) .030–.200 (0,8–5,1)
	MG-MW1			.006–.020 (0,15–0,5) .020–.119 (0,5–3)
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)

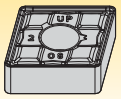
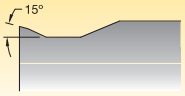
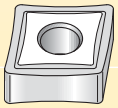
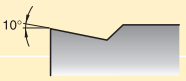
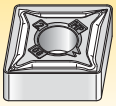
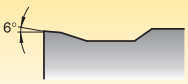
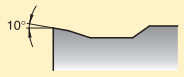
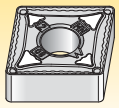
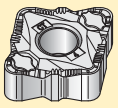
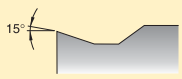
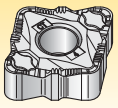
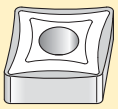
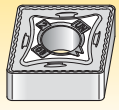
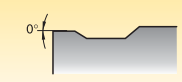
Select the geometry — based on feed rate and depth of cut

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

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
finishing	MG-FP			.004–.012 (0,1–0,3) / .010–.100 (0,3–2,5)
	MG-FH			.002–.010 (0,05–0,25) / .010–.040 (0,25–1)
	MG-FN			.005–.012 (0,1–0,3) / .010–.100 (0,3–2,5)
	MG-FX			.003–.009 (0,07–0,22) / .008–.040 (0,2–1)
	MP-K			.004–.012 (0,1–0,3) / .008–.100 (0,2–2,5)
medium machining	MG-MH			.006–.020 (0,15–0,5) / .012–.079 (0,3–2)
	MG-MX			.006–.014 (0,15–0,35) / .020–.060 (0,5–1,5)
medium sharp	MG-MS			.005–.014 (0,12–0,35) / .030–.200 (0,76–5,0)

Select the geometry — based on feed rate and depth of cut

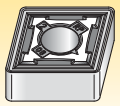
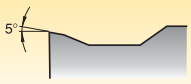
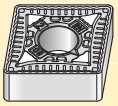
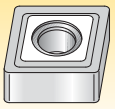
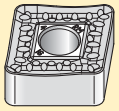
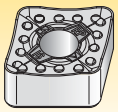
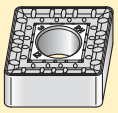
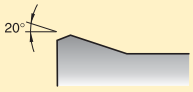
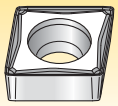
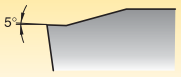
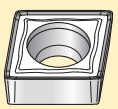
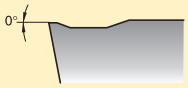
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
				.0015 (0,04) · .0025 (0,063) · .004 (0,01) · .006 (0,16) · .010 (0,25) · .016 (0,4) · .025 (0,63) · .040 (1,0) · .060 (1,6) · .100 (2,5) · .200 (5,0)
				.004 (0,1) · .006 (0,16) · .010 (0,25) · .016 (0,4) · .025 (0,63) · .040 (1,0) · .060 (1,6) · .100 (2,5) · .160 (4,0) · .250 (6,3) · .500 (10,0)
medium machining	**MG-UP**			.008–.025 (0,2–0,6); .040–.250 (1–6,4)
	__GP*			.012–.020 (0,1–0,35); .060–.125 (0,5–3,2)
	MG-MP			.006–.020 (0,2–0,5); .030–.200 (0,8–5,1)
	MG-P			.006–.020 (0,15–0,5); .030–.200 (0,75–5,0)
	MG-MN			.006–.020 (0,2–0,5); .020–.200 (0,5–5,1)
	MG-CT O.D. turning			.005–.020 (0,13–0,5); .040–.115 (1,0–3,0)
	MG-CT outward facing			.010–.020 (0,25–0,5); .010–.040 (0,25–1,0)
	-MS single sided			.006–.015 (0,2–0,4); .025–.090 (0,6–2,3)
	MG-UN			.008–.020 (0,2–0,5); .030–.150 (0,8–3,8)

*35° and 55° geometries are single sided.

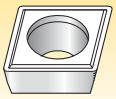
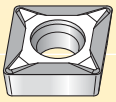
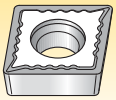
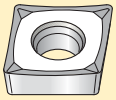
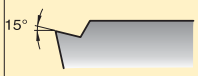
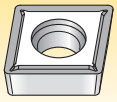
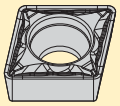
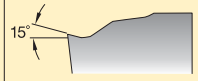
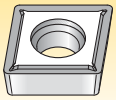
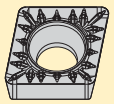
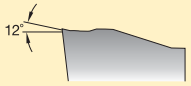
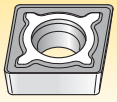
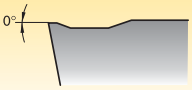
Select the geometry — based on feed rate and depth of cut

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

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
roughing	**MG-RP**			.008–.025 (0,2–0,6); .045–.250 (1,1–6,4)
	MG-RN			.010–.025 (0,3–0,63); .045–.250 (1,1–5,7)
heavy roughing	**MG**			.012–.030 (0,3–0,8); .045–.225 (1,1–5,7)
	MM-RM single sided			.010–.040 (0,3–1,0); .050–.500 (1,3–12,7)
	MM-RP			.008–.030 (0,2–1,0); .050–.400 (1,3–10,0)
	MM-RH single sided			.015–.050 (0,4–1,3); .050–.500 (1,3–12,7)
wiper finishing	**MT-FW**			.003–.013 (0,1–0,3); .008–.060 (0,2–1,5)
wiper, medium finishing	**MT-MW**			.005–.020 (0,1–0,5); .016–.130 (0,4–3,3)

Select the geometry — based on feed rate and depth of cut

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

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
				.0015 (0,04) .0025 (0,063) .004 (0,01) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .200 (5,0)
				.004 (0,1) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .160 (4,0) .250 (6,3) .500 (10,0)
fine finishing	__GM precision ground			.002–.008 (0,1–0,2) / .008–.040 (0,2–1,0)
	MT-11			.003–.010 (0,1–0,3) / .008–.050 (0,2–1,3)
	.MT-UF			.002–.010 (0,1–0,3) / .005–.050 (0,1–1,3)
finishing	GT-HP precision ground			.007–.015 (0,2–0,4) / .025–.090 (0,6–2,3)
	GT-LF precision ground			.007–.015 (0,2–0,4) / .030–.090 (0,8–2,3)
	MT-FP			.0025–.010 (0,063–0,25) / .006–.060 (0,16–1,6)
	MT-LF			.007–.015 (0,2–0,4) / .030–.090 (0,8–2,3)
medium machining	MT-MP			.004–.016 (0,01–0,4) / .016–.130 (0,4–2,3)
	MT-MF			.009–.017 (0,2–0,4) / .045–.090 (1,1–2,3)



Carbide Inserts

Primary Application

Kennametal offers a complete portfolio of ISO-/ANSI-style inserts. Positive, negative, CVD, PVD, or uncoated, we have the insert to help increase productivity and achieve greater savings.

Plus, our carbide insert line contains Beyond™ technology. Beyond inserts offer you greater versatility, reliability, and up to 30% higher productivity.

Beyond™ CVD Grades

- Higher productivity and profitability — up to 300% higher.
- Lower cutting forces — Increase speeds and reduce cycle time.
- Extended tool life.
- Predictable tool life / Uniform wear.
- Resists chip flow damage.
- Consistent surface finish.
- Products can be applied across a wide range of applications.
- Use it in low speed to high speed applications.
- For finish to rough turning of steel, cast iron, stainless steel, and high temp alloy turning.

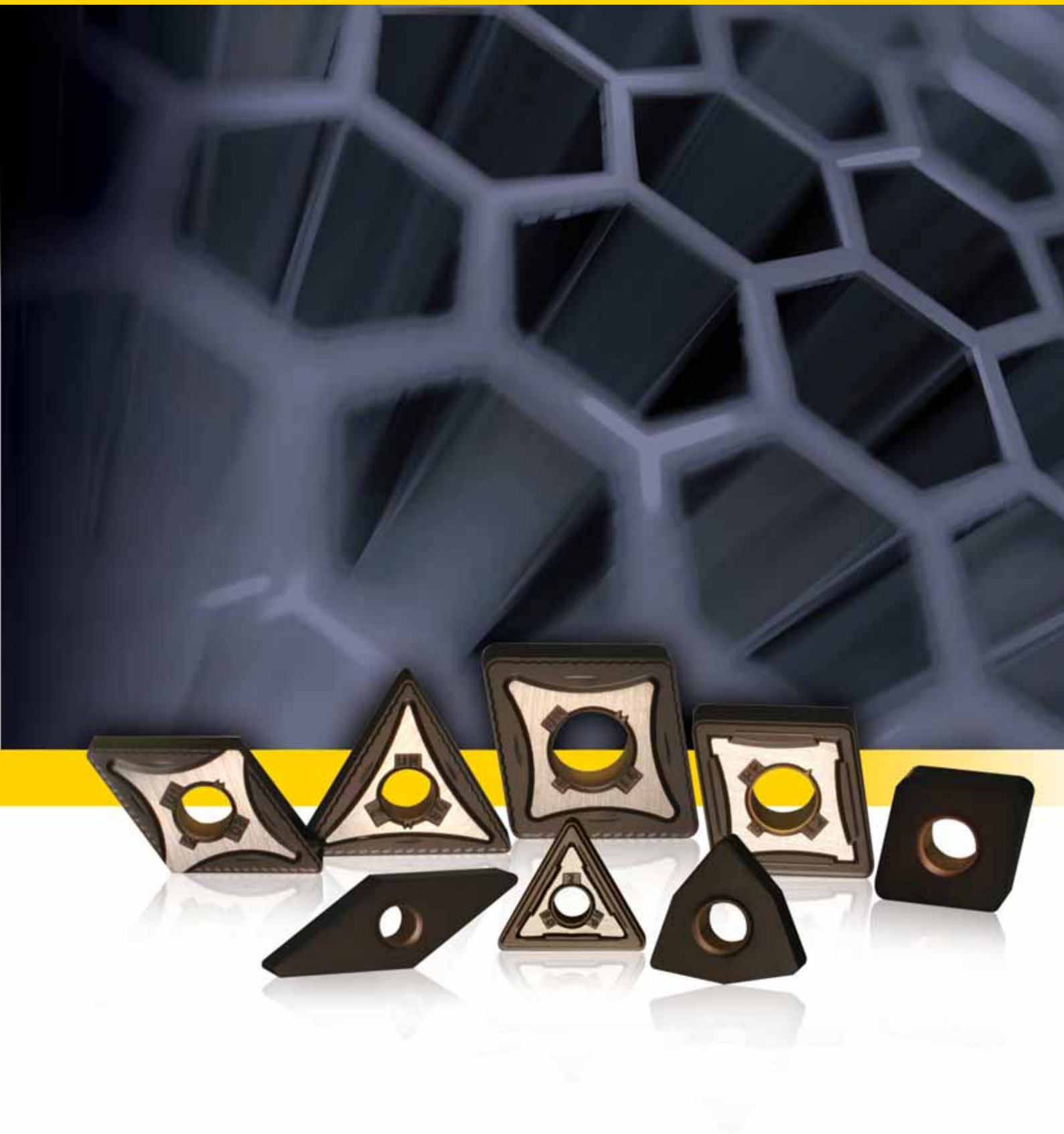
Beyond™ PVD Grades

KCU10™

- PVD-coated grade with superior wear resistance at elevated temperatures, allowing higher metal cutting speeds.
- For use in all materials, especially stainless steels and high-temp alloys.
- Improved depth-of-cut notch resistance
- Increase speed by 20–30% or feed by 10–15%.
- Use in finishing to medium applications.

KCU25™

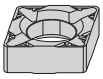
- PVD-coated grade with superior edge toughness and excellent wear resistance. Medium to roughing applications.
- Use in all materials.
- Increase speed, feed, and depth of cut by 10–20%.

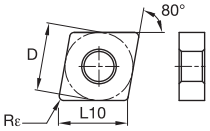


● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●											●	●					●	●	
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

CNGG-FBB

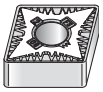


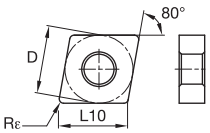


beyond BLAST™

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGG120404FBB	CNGG431FBB	12,70	1/2	12,90	.508	0,4	1/64
CNGG120408FBB	CNGG432FBB	12,70	1/2	12,90	.508	0,8	1/32

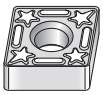
CNGG-FS

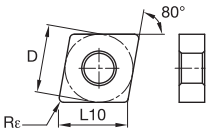




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGG120401FS	CNGG430FS	12,70	1/2	12,90	.508	0,1	.004
CNGG120402FS	CNGG4305FS	12,70	1/2	12,90	.508	0,2	.008
CNGG120404FS	CNGG431FS	12,70	1/2	12,90	.508	0,4	1/64
CNGG120408FS	CNGG432FS	12,70	1/2	12,90	.508	0,8	1/32
CNGG120412FS	CNGG433FS	12,70	1/2	12,90	.508	1,2	3/64

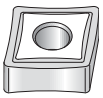
CNGG-LF

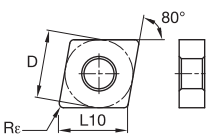




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGG120401LF	CNGG430LF	12,70	1/2	12,90	.508	0,1	.004
CNGG120402LF	CNGG4305LF	12,70	1/2	12,90	.508	0,2	.008
CNGG120404LF	CNGG431LF	12,70	1/2	12,90	.508	0,4	1/64
CNGG120408LF	CNGG432LF	12,70	1/2	12,90	.508	0,8	1/32
CNGG120412LF	CNGG433LF	12,70	1/2	12,90	.508	1,2	3/64
CNGG160608LF	CNGG542LF	15,88	5/8	16,12	.635	0,8	1/32
CNGG160612LF	CNGG543LF	15,88	5/8	16,12	.635	1,2	3/64

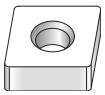
CNGP



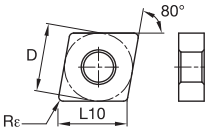


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGP120401	CNGP430	12,70	1/2	12,90	.508	0,1	.004
CNGP120402	CNGP4305	12,70	1/2	12,90	.508	0,2	.008
CNGP120404	CNGP431	12,70	1/2	12,90	.508	0,4	1/64
CNGP120408	CNGP432	12,70	1/2	12,90	.508	0,8	1/32
CNGP120412	CNGP433	12,70	1/2	12,90	.508	1,2	3/64
CNGP120416	CNGP434	12,70	1/2	12,90	.508	1,6	1/16

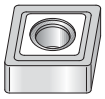
● first choice
○ alternate choice



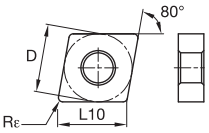
CNMA



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMA120404	**CNMA431**	12,70	1/2	12,90	.508	0,4	1/64						●	●	●															
CNMA120408	**CNMA432**	12,70	1/2	12,90	.508	0,8	1/32						●	●	●					●	●									
CNMA120412	**CNMA433**	12,70	1/2	12,90	.508	1,2	3/64						●	●	●					●										
CNMA120416	**CNMA434**	12,70	1/2	12,90	.508	1,6	1/16						●	●	●															
CNMA160608	**CNMA542**	15,88	5/8	16,12	.635	0,8	1/32							●	●															
CNMA160612	**CNMA543**	15,88	5/8	16,12	.635	1,2	3/64						●	●	●															
CNMA160616	**CNMA544**	15,88	5/8	16,12	.635	1,6	1/16						●	●	●															
CNMA190608	**CNMA642**	19,05	3/4	19,34	.762	0,8	1/32						●		●															
CNMA190612	**CNMA643**	19,05	3/4	19,34	.762	1,2	3/64						●	●	●							●								
CNMA190616	**CNMA644**	19,05	3/4	19,34	.762	1,6	1/16						●		●							●								



CNMG



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404B	**CNMG431**	12,70	1/2	12,90	.508	0,4	1/64														●									
CNMG120408	**CNMG432**	12,70	1/2	12,90	.508	0,8	1/32													●	●									
CNMG120412	**CNMG433**	12,70	1/2	12,90	.508	1,2	3/64														●									
CNMG160612	**CNMG543**	15,88	5/8	16,12	.635	1,2	3/64														●									
CNMG190608	**CNMG642**	19,05	3/4	19,34	.762	0,8	1/32			●		●									●									
CNMG190612	**CNMG643**	19,05	3/4	19,34	.762	1,2	3/64			●		●									●			●	●					
CNMG190616	**CNMG644**	19,05	3/4	19,34	.762	1,6	1/16			●		●													●					
CNMG250924	**CNMG866**	25,40	1	25,79	1.015	2,4	3/32			●		●													●					

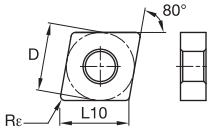
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

P	● ● ● ● ●
M	● ● ● ● ●
K	● ● ● ●
N	●
S	● ● ● ● ● ● ● ● ●
H	

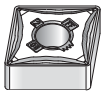
CNMG-CT

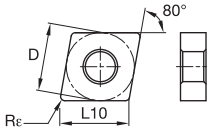




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408CT	CNMG432CT	12,70	1/2	12,90	.508	0,8	1/32	●	●	●													●	●						
CNMG120412CT	CNMG433CT	12,70	1/2	12,90	.508	1,2	3/64	●	●	●																				
CNMG120416CT	CNMG434CT	12,70	1/2	12,90	.508	1,6	1/16		●																					

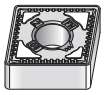
CNMG-FF

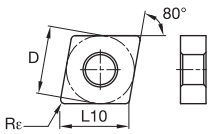




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG090304FF	CNMG321FF	9,53	3/8	9,67	.381	0,4	1/64		●														●	●					●	
CNMG090308FF	CNMG322FF	9,53	3/8	9,67	.381	0,8	1/32		●														●	●					●	
CNMG120404FF	CNMG431FF	12,70	1/2	12,90	.508	0,4	1/64	●	●														●	●					●	
CNMG120408FF	CNMG432FF	12,70	1/2	12,90	.508	0,8	1/32	●	●														●	●					●	

CNMG-FN

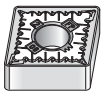


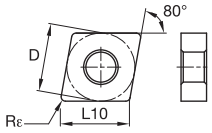


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG090304FN	CNMG321FN	9,53	3/8	9,67	.381	0,4	1/64		●				●																●	
CNMG090308FN	CNMG322FN	9,53	3/8	9,67	.381	0,8	1/32		●				●																●	
CNMG120402FN	CNMG4305FN	12,70	1/2	12,90	.508	0,2	.008																●	●					●	
CNMG120404FN	CNMG431FN	12,70	1/2	12,90	.508	0,4	1/64	●	●	●			●																●	
CNMG120408FN	CNMG432FN	12,70	1/2	12,90	.508	0,8	1/32	●	●	●			●																●	
CNMG120412FN	CNMG433FN	12,70	1/2	12,90	.508	1,2	3/64	●	●	●			●																●	
CNMG120416FN	CNMG434FN	12,70	1/2	12,90	.508	1,6	1/16		●	●			●																	

● first choice
○ alternate choice

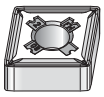
CNMG-FP

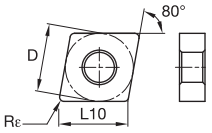




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404FP	CNMG431FP	12,70	1/2	12,90	.508	0,4	1/64		●							●							●	●					●	
CNMG120408FP	CNMG432FP	12,70	1/2	12,90	.508	0,8	1/32		●	●						●							●	●					●	
CNMG120412FP	CNMG433FP	12,70	1/2	12,90	.508	1,2	3/64									●							●	●						

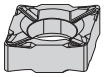
CNMG-FW

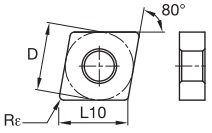




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404FW	CNMG431FW	12,70	1/2	12,90	.508	0,4	1/64	●	●														●	●					●	
CNMG120408FW	CNMG432FW	12,70	1/2	12,90	.508	0,8	1/32	●	●														●	●					●	
CNMG120412FW	CNMG433FW	12,70	1/2	12,90	.508	1,2	3/64	●	●														●	●					●	

CNMG-MBB





beyond BLAST™

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404MBB	CNMG431MBB	12,70	1/2	12,90	.508	0,4	1/64												●				●							
CNMG120408MBB	CNMG432MBB	12,70	1/2	12,90	.508	0,8	1/32												●				●							


C2–C70


C72–C118


C119–C129

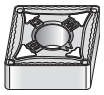

C130–C161

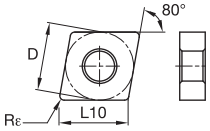

B10–B23


B24–B31


B32–B37

● first choice
○ alternate choice

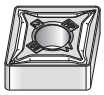


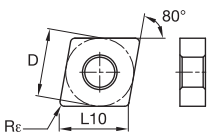


CNMG-MN

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●				●	●		●	●					
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG090304MN	CNMG321MN	9,53	3/8	9,67	.381	0,4	1/64
CNMG090308MN	CNMG322MN	9,53	3/8	9,67	.381	0,8	1/32
CNMG090312MN	CNMG323MN	9,53	3/8	9,67	.381	1,2	3/64
CNMG120404MN	CNMG431MN	12,70	1/2	12,90	.508	0,4	1/64
CNMG120408MN	CNMG432MN	12,70	1/2	12,90	.508	0,8	1/32
CNMG120412MN	CNMG433MN	12,70	1/2	12,90	.508	1,2	3/64
CNMG120416MN	CNMG434MN	12,70	1/2	12,90	.508	1,6	1/16
CNMG160608MN	CNMG542MN	15,88	5/8	16,12	.635	0,8	1/32
CNMG160612MN	CNMG543MN	15,88	5/8	16,12	.635	1,2	3/64
CNMG160616MN	CNMG544MN	15,88	5/8	16,12	.635	1,6	1/16
CNMG190608MN	CNMG642MN	19,05	3/4	19,34	.762	0,8	1/32
CNMG190612MN	CNMG643MN	19,05	3/4	19,34	.762	1,2	3/64
CNMG190616MN	CNMG644MN	19,05	3/4	19,34	.762	1,6	1/16

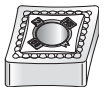




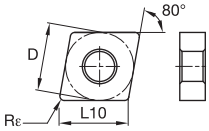
CNMG-MP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG090308MP	CNMG322MP	9,53	3/8	9,67	.381	0,8	1/32
CNMG120404MP	CNMG431MP	12,70	1/2	12,90	.508	0,4	1/64
CNMG120408MP	CNMG432MP	12,70	1/2	12,90	.508	0,8	1/32
CNMG120412MP	CNMG433MP	12,70	1/2	12,90	.508	1,2	3/64
CNMG120416MP	CNMG434MP	12,70	1/2	12,90	.508	1,6	1/16
CNMG160608MP	CNMG542MP	15,88	5/8	16,12	.635	0,8	1/32
CNMG160612MP	CNMG543MP	15,88	5/8	16,12	.635	1,2	3/64
CNMG160616MP	CNMG544MP	15,88	5/8	16,12	.635	1,6	1/16
CNMG190608MP	CNMG642MP	19,05	3/4	19,34	.762	0,8	1/32
CNMG190612MP	CNMG643MP	19,05	3/4	19,34	.762	1,2	3/64
CNMG190616MP	CNMG644MP	19,05	3/4	19,34	.762	1,6	1/16

● first choice
○ alternate choice

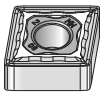


CNMG-MS

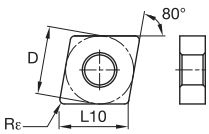


P	●	●	●	●	●														●	●		●	●				●	●
M									●	●	●																		
K						●	●	●											●	●		●	●						●
N																												●			
S															●	●	●	●	●	●	●	●	●	●							
H																															

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120401MS	CNMG430MS	12,70	1/2	12,90	.508	0,1	.004																●		●	●		●			
CNMG120402MS	CNMG4305MS	12,70	1/2	12,90	.508	0,2	.008													●			●		●	●		●			
CNMG120404MS	CNMG431MS	12,70	1/2	12,90	.508	0,4	1/64													●			●		●	●		●			
CNMG120408MS	CNMG432MS	12,70	1/2	12,90	.508	0,8	1/32													●			●		●	●		●			
CNMG120412MS	CNMG433MS	12,70	1/2	12,90	.508	1,2	3/64													●			●		●	●		●			
CNMG120416MS	CNMG434MS	12,70	1/2	12,90	.508	1,6	1/16													●			●		●	●		●			
CNMG160608MS	CNMG542MS	15,88	5/8	16,12	.635	0,8	1/32																●		●	●		●			
CNMG160612MS	CNMG543MS	15,88	5/8	16,12	.635	1,2	3/64													●			●		●	●		●			
CNMG190608MS	CNMG642MS	19,05	3/4	19,34	.762	0,8	1/32																●		●	●		●			
CNMG190612MS	CNMG643MS	19,05	3/4	19,34	.762	1,2	3/64													●			●		●	●		●			
CNMG190616MS	CNMG644MS	19,05	3/4	19,34	.762	1,6	1/16																●		●	●		●			



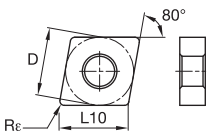
CNMG-MW



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408MW	CNMG432MW	12,70	1/2	12,90	.508	0,8	1/32	●	●	●																					
CNMG120412MW	CNMG433MW	12,70	1/2	12,90	.508	1,2	3/64	●	●	●																					



CNMG-P



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404P	CNMG431P	12,70	1/2	12,90	.508	0,4	1/64													●			●	●							
CNMG120408P	CNMG432P	12,70	1/2	12,90	.508	0,8	1/32													●			●	●					●		
CNMG120412P	CNMG433P	12,70	1/2	12,90	.508	1,2	3/64													●			●	●							
CNMG120416P	CNMG434P	12,70	1/2	12,90	.508	1,6	1/16													●			●	●							
CNMG190612P	CNMG643P	19,05	3/4	19,34	.762	1,2	3/64																●	●							


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

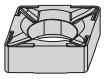

B32–B37

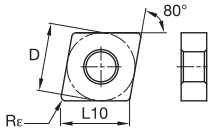
Inserts

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

CNMG-RBB

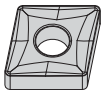


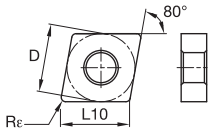


beyond BLAST™

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG120408RBB	CNMG432RBB	12,70	1/2	12,90	.508	0,8	1/32

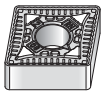
CNMG-RM

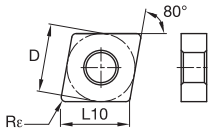




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG190612RM	CNMG643RM	19,05	3/4	19,34	.762	1,2	3/64
CNMG190616RM	CNMG644RM	19,05	3/4	19,34	.762	1,6	1/16
CNMG250924RM	CNMG866RM	25,40	1	25,79	1.015	2,4	3/32

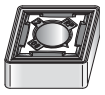
CNMG-RN

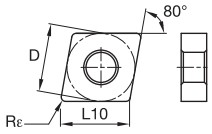




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG120408RN	CNMG432RN	12,70	1/2	12,90	.508	0,8	1/32
CNMG120412RN	CNMG433RN	12,70	1/2	12,90	.508	1,2	3/64
CNMG120416RN	CNMG434RN	12,70	1/2	12,90	.508	1,6	1/16
CNMG160608RN	CNMG542RN	15,88	5/8	16,12	.635	0,8	1/32
CNMG160612RN	CNMG543RN	15,88	5/8	16,12	.635	1,2	3/64
CNMG160616RN	CNMG544RN	15,88	5/8	16,12	.635	1,6	1/16
CNMG190608RN	CNMG642RN	19,05	3/4	19,34	.762	0,8	1/32
CNMG190612RN	CNMG643RN	19,05	3/4	19,34	.762	1,2	3/64
CNMG190616RN	CNMG644RN	19,05	3/4	19,34	.762	1,6	1/16
CNMG190624RN	CNMG646RN	19,05	3/4	19,34	.762	2,4	3/32

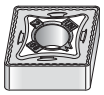
CNMG-RP



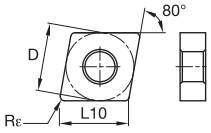


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMG120404RP	CNMG431RP	12,70	1/2	12,90	.508	0,4	1/64
CNMG120408RP	CNMG432RP	12,70	1/2	12,90	.508	0,8	1/32
CNMG120412RP	CNMG433RP	12,70	1/2	12,90	.508	1,2	3/64
CNMG120416RP	CNMG434RP	12,70	1/2	12,90	.508	1,6	1/16
CNMG160608RP	CNMG542RP	15,88	5/8	16,12	.635	0,8	1/32
CNMG160612RP	CNMG543RP	15,88	5/8	16,12	.635	1,2	3/64
CNMG160616RP	CNMG544RP	15,88	5/8	16,12	.635	1,6	1/16
CNMG190612RP	CNMG643RP	19,05	3/4	19,34	.762	1,2	3/64
CNMG190616RP	CNMG644RP	19,05	3/4	19,34	.762	1,6	1/16

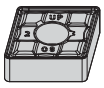
● first choice
○ alternate choice



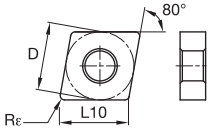
CNMG-UN



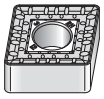
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404UN	CNMG431UN	12,70	1/2	12,90	.508	0,4	1/64						●	●	●															
CNMG120408UN	CNMG432UN	12,70	1/2	12,90	.508	0,8	1/32						●	●	●															
CNMG120412UN	CNMG433UN	12,70	1/2	12,90	.508	1,2	3/64						●	●	●															
CNMG120416UN	CNMG434UN	12,70	1/2	12,90	.508	1,6	1/16						●	●	●															
CNMG160608UN	CNMG542UN	15,88	5/8	16,12	.635	0,8	1/32						●	●	●															
CNMG160612UN	CNMG543UN	15,88	5/8	16,12	.635	1,2	3/64						●	●	●															
CNMG160616UN	CNMG544UN	15,88	5/8	16,12	.635	1,6	1/16						●	●	●															
CNMG190608UN	CNMG642UN	19,05	3/4	19,34	.762	0,8	1/32						●	●	●															
CNMG190612UN	CNMG643UN	19,05	3/4	19,34	.762	1,2	3/64						●	●	●															
CNMG190616UN	CNMG644UN	19,05	3/4	19,34	.762	1,6	1/16						●	●	●															



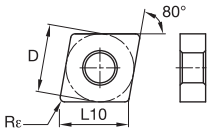
CNMG-UP



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404UP	CNMG431UP	12,70	1/2	12,90	.508	0,4	1/64									●	●							●							
CNMG120408UP	CNMG432UP	12,70	1/2	12,90	.508	0,8	1/32									●	●	●					●	●							
CNMG120412UP	CNMG433UP	12,70	1/2	12,90	.508	1,2	3/64									●	●	●					●	●							
CNMG160608UP	CNMG542UP	15,88	5/8	16,12	.635	0,8	1/32									●	●	●						●							
CNMG160612UP	CNMG543UP	15,88	5/8	16,12	.635	1,2	3/64									●	●	●					●	●							
CNMG190608UP	CNMG642UP	19,05	3/4	19,34	.762	0,8	1/32									●	●														
CNMG190612UP	CNMG643UP	19,05	3/4	19,34	.762	1,2	3/64									●	●	●													
CNMG190616UP	CNMG644UP	19,05	3/4	19,34	.762	1,6	1/16									●	●	●													



CNMM-RH



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM190612RH	CNMM643RH	19,05	3/4	19,34	.762	1,2	3/64		●	●	●	●																		
CNMM190616RH	CNMM644RH	19,05	3/4	19,34	.762	1,6	1/16		●	●	●	●																		
CNMM190624RH	CNMM646RH	19,05	3/4	19,34	.762	2,4	3/32		●	●	●																			
CNMM250924RH	CNMM866RH	25,40	1	25,79	1.015	2,4	3/32		●	●	●	●																		


C2–C70


C72–C118


C119–C129


C130–C161



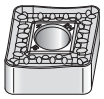
B10–B23

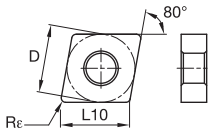

B24–B31


B32–B37

● first choice
○ alternate choice

CNMM-RM

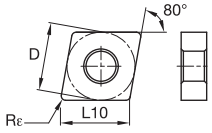




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM120408RM	CNMM432RM	12,70	1/2	12,90	.508	0,8	1/32		●	●	●																			
CNMM120412RM	CNMM433RM	12,70	1/2	12,90	.508	1,2	3/64		●	●	●	●																		
CNMM120416RM	CNMM434RM	12,70	1/2	12,90	.508	1,6	1/16			●		●																		
CNMM160612RM	CNMM543RM	15,88	5/8	16,12	.635	1,2	3/64		●	●	●																			
CNMM160616RM	CNMM544RM	15,88	5/8	16,12	.635	1,6	1/16		●	●	●																			
CNMM160624RM	CNMM546RM	15,88	5/8	16,12	.635	2,4	3/32		●	●																				
CNMM190612RM	CNMM643RM	19,05	3/4	19,34	.762	1,2	3/64		●	●	●	●																		
CNMM190616RM	CNMM644RM	19,05	3/4	19,34	.762	1,6	1/16		●	●	●	●																		
CNMM190624RM	CNMM646RM	19,05	3/4	19,34	.762	2,4	3/32			●	●																			
CNMM250924RM	CNMM866RM	25,40	1	25,79	1.015	2,4	3/32		●	●	●	●																		

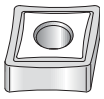
CNMM-RP

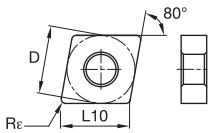




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMM120408RP	CNMM432RP	12,70	1/2	12,90	.508	0,8	1/32	●	●	●	●	●				●	●													
CNMM120412RP	CNMM433RP	12,70	1/2	12,90	.508	1,2	3/64	●	●	●	●	●				●	●	●												
CNMM120416RP	CNMM434RP	12,70	1/2	12,90	.508	1,6	1/16		●	●	●	●				●														
CNMM160608RP	CNMM542RP	15,88	5/8	16,12	.635	0,8	1/32			●		●																		
CNMM160612RP	CNMM543RP	15,88	5/8	16,12	.635	1,2	3/64	●	●	●	●	●				●	●	●												
CNMM160616RP	CNMM544RP	15,88	5/8	16,12	.635	1,6	1/16	●	●	●	●	●				●	●													
CNMM190612RP	CNMM643RP	19,05	3/4	19,34	.762	1,2	3/64		●	●	●	●				●	●													
CNMM190616RP	CNMM644RP	19,05	3/4	19,34	.762	1,6	1/16		●	●	●	●				●	●	●												
CNMM190624RP	CNMM646RP	19,05	3/4	19,34	.762	2,4	3/32		●	●						●														
CNMM250924RP	CNMM866RP	25,40	1	25,79	1.015	2,4	3/32			●		●																		

CNMP



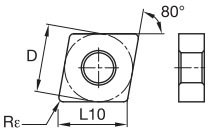


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMP120404	CNMP431	12,70	1/2	12,90	.508	0,4	1/64													●	●								●	
CNMP120408	CNMP432	12,70	1/2	12,90	.508	0,8	1/32													●	●								●	
CNMP120412	CNMP433	12,70	1/2	12,90	.508	1,2	3/64														●									
CNMP160608	CNMP542	15,88	5/8	16,12	.635	0,8	1/32														●									
CNMP160612	CNMP543	15,88	5/8	16,12	.635	1,2	3/64														●								●	
CNMP190608	CNMP642	19,05	3/4	19,34	.762	0,8	1/32														●									
CNMP190612	CNMP643	19,05	3/4	19,34	.762	1,2	3/64													●	●								●	

● first choice
○ alternate choice



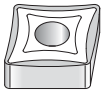
CNMP-K

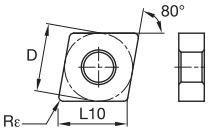


P		●	●	●	●	●																								●	●
M										●	●	●							●	●		●	●								
K							●	●	●																						●
N																														●			
S															●	●	●	●	●	●	●	●	●	●									
H																																	

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMP120404K	**CNMP431K**	12,70	1/2	12,90	.508	0,4	1/64			●																					
CNMP120408K	**CNMP432K**	12,70	1/2	12,90	.508	0,8	1/32		●	●																					
CNMP120412K	**CNMP433K**	12,70	1/2	12,90	.508	1,2	3/64			●																					

CNMS





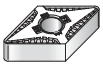
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMS120408	**CNMS432**	12,70	1/2	12,90	.508	0,8	1/32
CNMS160608	**CNMS542**	15,88	5/8	16,12	.635	0,8	1/32
CNMS190608	**CNMS642**	19,05	3/4	19,34	.762	0,8	1/32
CNMS190612	**CNMS643**	19,05	3/4	19,34	.762	1,2	3/64

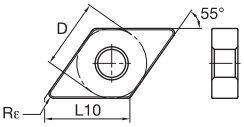
						
C2–C70	C72–C118	C119–C129	C130–C161	B10–B23	B24–B31	B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																	●		●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

DNGG-FS

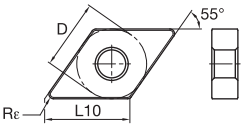




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGG110402FS	DNGG3305FS	9,52	3/8	11,63	.458	0,2	.008
DNGG110404FS	DNGG331FS	9,52	3/8	11,63	.458	0,4	1/64
DNGG110408FS	DNGG332FS	9,52	3/8	11,63	.458	0,8	1/32
DNGG150401FS	DNGG430FS	12,70	1/2	15,50	.610	0,1	.004
DNGG150402FS	DNGG4305FS	12,70	1/2	15,50	.610	0,2	.008
DNGG150604FS	DNGG441FS	12,70	1/2	15,50	.610	0,4	1/64
DNGG150404FS	DNGG431FS	12,70	1/2	15,50	.610	0,4	1/64
DNGG150608FS	DNGG442FS	12,70	1/2	15,50	.610	0,8	1/32
DNGG150408FS	DNGG432FS	12,70	1/2	15,50	.610	0,8	1/32
DNGG150412FS	DNGG433FS	12,70	1/2	15,50	.610	1,2	3/64
DNGG150416FS	DNGG434FS	12,70	1/2	15,50	.610	1,6	1/16

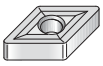
DNGG-LF

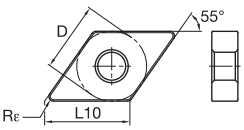




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGG150402LF	DNGG4305LF	12,70	1/2	15,50	.610	0,2	.008
DNGG150404LF	DNGG431LF	12,70	1/2	15,50	.610	0,4	1/64
DNGG150408LF	DNGG432LF	12,70	1/2	15,50	.610	0,8	1/32

DNGP



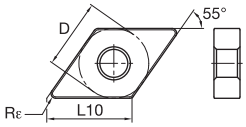


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGP150401	DNGP430	12,70	1/2	15,50	.610	0,1	.004
DNGP150402	DNGP4305	12,70	1/2	15,50	.610	0,2	.008
DNGP150404	DNGP431	12,70	1/2	15,50	.610	0,4	1/64
DNGP150408	DNGP432	12,70	1/2	15,50	.610	0,8	1/32
DNGP150604	DNGP441	12,70	1/2	15,50	.610	0,4	1/64
DNGP150608	DNGP442	12,70	1/2	15,50	.610	0,8	1/32
DNGP150612	DNGP443	12,70	1/2	15,50	.610	1,2	3/64

● first choice
○ alternate choice

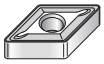
DNMA

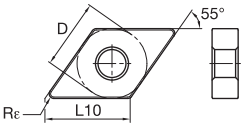




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMA110408	**DNMA332**	9,53	3/8	11,63	.458	0,8	1/32						●		●															
DNMA110412	**DNMA333**	9,53	3/8	11,63	.458	1,2	3/64								●															
DNMA150408	**DNMA432**	12,70	1/2	15,50	.610	0,8	1/32						●	●	●															
DNMA150412	**DNMA433**	12,70	1/2	15,50	.610	1,2	3/64						●	●	●															
DNMA150416	**DNMA434**	12,70	1/2	15,50	.610	1,6	1/16								●															
DNMA150608	**DNMA442**	12,70	1/2	15,50	.610	0,8	1/32						●	●	●															
DNMA150612	**DNMA443**	12,70	1/2	15,50	.610	1,2	3/64						●	●	●															
DNMA150616	**DNMA444**	12,70	1/2	15,50	.610	1,6	1/16								●															

DNMG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150404B	**DNMG431**	12,70	1/2	15,50	.610	0,4	1/64														●									
DNMG150408B	**DNMG432**	12,70	1/2	15,50	.610	0,8	1/32													●	●									
DNMG150412B	**DNMG433**	12,70	1/2	15,50	.610	1,2	3/64														●									
DNMG150608B	**DNMG442**	12,70	1/2	15,50	.610	0,8	1/32													●										


C2–C70


C72–C118


C119–C129


C130–C161



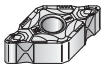
B10–B23

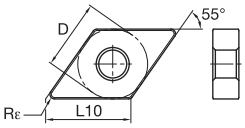

B24–B31


B32–B37

● first choice
○ alternate choice

DNMG-CT

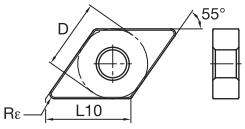




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404CT	DNMG331CT	9,53	3/8	11,63	.458	0,4	1/64																	●						
DNMG110408CT	DNMG332CT	9,53	3/8	11,63	.458	0,8	1/32	●	●															●						
DNMG150404CT	DNMG431CT	12,70	1/2	15,50	.610	0,4	1/64	●	●	●													●	●						
DNMG150408CT	DNMG432CT	12,70	1/2	15,50	.610	0,8	1/32	●	●	●													●	●						
DNMG150412CT	DNMG433CT	12,70	1/2	15,50	.610	1,2	3/64		●														●	●						
DNMG150604CT	DNMG441CT	12,70	1/2	15,50	.610	0,3	.013		●															●						
DNMG150608CT	DNMG442CT	12,70	1/2	15,50	.610	0,7	.029	●	●	●													●	●						
DNMG150612CT	DNMG443CT	12,70	1/2	15,50	.610	1,1	.045	●	●	●													●	●						

DNMG-FF

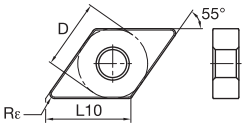




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FF	DNMG331FF	9,53	3/8	11,63	.458	0,4	1/64	●	●														●	●					●	
DNMG110408FF	DNMG332FF	9,53	3/8	11,63	.458	0,8	1/32	●	●														●	●					●	
DNMG150404FF	DNMG431FF	12,70	1/2	15,50	.610	0,4	1/64	●	●														●	●					●	
DNMG150408FF	DNMG432FF	12,70	1/2	15,50	.610	0,8	1/32	●	●														●	●					●	
DNMG150604FF	DNMG441FF	12,70	1/2	15,50	.610	0,4	1/64	●	●														●	●					●	
DNMG150608FF	DNMG442FF	12,70	1/2	15,50	.610	0,8	1/32	●	●														●	●					●	

DNMG-FN

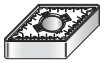


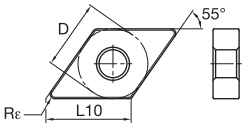


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FN	DNMG331FN	9,53	3/8	11,63	.458	0,4	1/64	●	●	●			●																●	
DNMG110408FN	DNMG332FN	9,53	3/8	11,63	.458	0,8	1/32	●	●	●			●																●	
DNMG110412FN	DNMG333FN	9,53	3/8	11,63	.458	1,2	3/64	●	●																				●	
DNMG150404FN	DNMG431FN	12,70	1/2	15,50	.610	0,4	1/64	●	●	●			●																●	
DNMG150408FN	DNMG432FN	12,70	1/2	15,50	.610	0,8	1/32	●	●	●			●																●	
DNMG150412FN	DNMG433FN	12,70	1/2	15,50	.610	1,2	3/64	●	●				●																●	
DNMG150604FN	DNMG441FN	12,70	1/2	15,50	.610	0,4	1/64	●	●	●			●																●	
DNMG150608FN	DNMG442FN	12,70	1/2	15,50	.610	0,8	1/32	●	●	●			●																●	
DNMG150612FN	DNMG443FN	12,70	1/2	15,50	.610	1,2	3/64	●	●	●			●																●	

● first choice
○ alternate choice

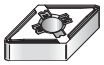
DNMG-FP

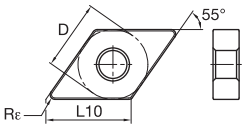




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FP	DNMG331FP	9,53	3/8	11,63	.458	0,4	1/64									●							●	●					●	
DNMG110408FP	DNMG332FP	9,53	3/8	11,63	.458	0,8	1/32		●							●							●	●					●	
DNMG150404FP	DNMG431FP	12,70	1/2	15,50	.610	0,4	1/64									●							●	●					●	
DNMG150408FP	DNMG432FP	12,70	1/2	15,50	.610	0,8	1/32		●	●						●							●	●					●	
DNMG150412FP	DNMG433FP	12,70	1/2	15,50	.610	1,2	3/64									●							●	●						
DNMG150604FP	DNMG441FP	12,70	1/2	15,50	.610	0,4	1/64									●							●	●					●	
DNMG150608FP	DNMG442FP	12,70	1/2	15,50	.610	0,8	1/32		●	●						●							●	●					●	
DNMG150612FP	DNMG443FP	12,70	1/2	15,50	.610	1,2	3/64									●							●	●						

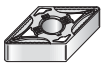
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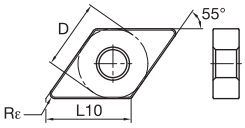




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404FW	DNMG331FW	9,53	3/8	11,63	.458	0,4	1/64	●	●														●	●					●	
DNMG110408FW	DNMG332FW	9,53	3/8	11,63	.458	0,8	1/32	●	●															●					●	
DNMG150404FW	DNMG431FW	12,70	1/2	15,50	.610	0,4	1/64		●														●	●					●	
DNMG150408FW	DNMG432FW	12,70	1/2	15,50	.610	0,4	.016	●	●														●	●					●	
DNMG150604FW	DNMG441FW	12,70	1/2	15,50	.610	0,4	1/64	●	●														●	●					●	
DNMG150608FW	DNMG442FW	12,70	1/2	15,50	.610	0,4	.016	●	●														●	●					●	

DNMG-MN





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110404MN	DNMG331MN	9,53	3/8	11,63	.458	0,4	1/64	●	●	●	●																			
DNMG110408MN	DNMG332MN	9,53	3/8	11,63	.458	0,8	1/32	●	●	●	●																			
DNMG110412MN	DNMG333MN	9,53	3/8	11,63	.458	1,2	3/64		●	●																				
DNMG150404MN	DNMG431MN	12,70	1/2	15,50	.610	0,4	1/64	●	●	●	●																			
DNMG150408MN	DNMG432MN	12,70	1/2	15,50	.610	0,8	1/32	●	●	●	●	●																		
DNMG150412MN	DNMG433MN	12,70	1/2	15,50	.610	1,2	3/64	●	●	●		●																		
DNMG150416MN	DNMG434MN	12,70	1/2	15,50	.610	1,6	1/16		●	●																				
DNMG150604MN	DNMG441MN	12,70	1/2	15,50	.610	0,4	1/64	●	●	●	●																			
DNMG150608MN	DNMG442MN	12,70	1/2	15,50	.610	0,8	1/32	●	●	●	●	●																		
DNMG150612MN	DNMG443MN	12,70	1/2	15,50	.610	1,2	3/64	●	●	●		●																		
DNMG150616MN	DNMG444MN	12,70	1/2	15,50	.610	1,6	1/16		●																					
DNMG190612MN	DNMG543MN	15,88	5/8	19,38	.763	1,2	3/64		●		●																			


C2–C70


C72–C118


C119–C129


C130–C161



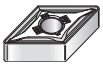
B10–B23

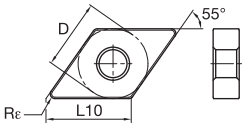

B24–B31


B32–B37

● first choice
○ alternate choice

DNMG-MP

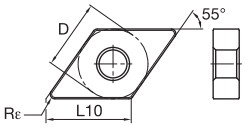




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408MP	DNMG332MP	9,53	3/8	11,63	.458	0,8	1/32									●	●						●	●							
DNMG110412MP	DNMG333MP	9,53	3/8	11,63	.458	1,2	3/64									●	●							●							
DNMG150404MP	DNMG431MP	12,70	1/2	15,50	.610	0,4	1/64									●	●	●					●	●							
DNMG150408MP	DNMG432MP	12,70	1/2	15,50	.610	0,8	1/32		●	●						●	●	●					●	●							
DNMG150412MP	DNMG433MP	12,70	1/2	15,50	.610	1,2	3/64									●	●						●	●							
DNMG150604MP	DNMG441MP	12,70	1/2	15,50	.610	0,4	1/64									●	●	●					●	●							
DNMG150608MP	DNMG442MP	12,70	1/2	15,50	.610	0,8	1/32		●	●						●	●	●					●	●		●	●				
DNMG150612MP	DNMG443MP	12,70	1/2	15,50	.610	1,2	3/64		●							●	●						●	●		●	●				

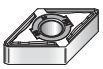
DNMG-MS

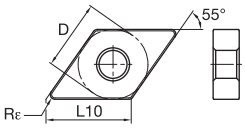




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408MS	DNMG332MS	9,53	3/8	11,63	.458	0,8	1/32													●			●		●	●		●			
DNMG150401MS	DNMG430MS	12,70	1/2	15,50	.610	0,1	.004																●		●						
DNMG150402MS	DNMG4305MS	12,70	1/2	15,50	.610	0,2	.008																●		●	●		●			
DNMG150404MS	DNMG431MS	12,70	1/2	15,50	.610	0,4	1/64													●			●		●	●		●			
DNMG150604MS	DNMG441MS	12,70	1/2	15,50	.610	0,4	1/64													●			●		●	●		●			
DNMG150608MS	DNMG442MS	12,70	1/2	15,50	.610	0,8	1/32													●			●		●	●		●			
DNMG150408MS	DNMG432MS	12,70	1/2	15,50	.610	0,8	1/32													●			●		●	●		●			
DNMG150412MS	DNMG433MS	12,70	1/2	15,50	.610	1,2	3/64																●		●	●		●			
DNMG150612MS	DNMG443MS	12,70	1/2	15,50	.610	1,2	3/64													●			●		●	●		●			

DNMG-MW

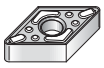


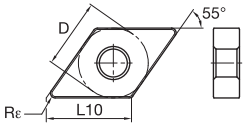


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150408MW	DNMG432MW	12,70	1/2	15,50	.610	0,4	1/64	●	●	●																				
DNMG150412MW	DNMG433MW	12,70	1/2	15,50	.610	1,2	3/64	●	●	●																				
DNMG150608MW	DNMG442MW	12,70	1/2	15,50	.610	0,4	1/64	●	●	●																				
DNMG150612MW	DNMG443MW	12,70	1/2	15,50	.610	1,2	3/64	●	●	●																				

● first choice
○ alternate choice

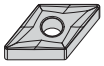
DNMG-P

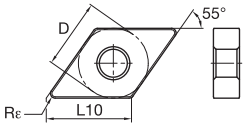




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150404P	DNMG431P	12,70	1/2	15,50	.610	0,4	1/64																●	●							
DNMG150408P	DNMG432P	12,70	1/2	15,50	.610	0,8	1/32													●			●	●							
DNMG150604P	DNMG441P	12,70	1/2	15,50	.610	0,4	1/64																	●							
DNMG150608P	DNMG442P	12,70	1/2	15,50	.610	0,8	1/32																●	●							

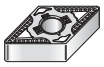
DNMG-RM

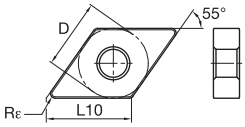




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG190608RM	DNMG542RM	15,88	5/8	19,38	.763	0,8	1/32			●														●						
DNMG190612RM	DNMG543RM	15,88	5/8	19,38	.763	1,2	3/64			●														●						

DNMG-RN





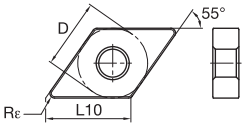
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG150408RN	DNMG432RN	12,70	1/2	15,50	.610	0,8	1/32		●	●	●	●																		
DNMG150412RN	DNMG433RN	12,70	1/2	15,50	.610	1,2	3/64		●	●	●																			
DNMG150416RN	DNMG434RN	12,70	1/2	15,50	.610	1,6	1/16		●	●																				
DNMG150608RN	DNMG442RN	12,70	1/2	15,50	.610	0,8	1/32	●	●	●	●	●																		
DNMG150612RN	DNMG443RN	12,70	1/2	15,50	.610	1,2	3/64	●	●	●	●	●																		
DNMG150616RN	DNMG444RN	12,70	1/2	15,50	.610	1,6	1/16		●	●	●	●																		
DNMG190608RN	DNMG542RN	15,88	5/8	19,38	.763	0,8	1/32		●	●	●																			
DNMG190612RN	DNMG543RN	15,88	5/8	19,38	.763	1,2	3/64		●	●	●																			

C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice



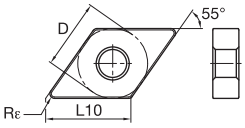
DNMG-RP



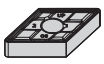
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMG110408RP	DNMG332RP	9,53	3/8	11,63	.458	0,8	1/32		●	●					●	●							●	●	●	●		●			
DNMG110412RP	DNMG333RP	9,53	3/8	11,63	.458	1,2	3/64		●	●					●	●															
DNMG150408RP	DNMG432RP	12,70	1/2	15,50	.610	0,8	1/32		●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
DNMG150412RP	DNMG433RP	12,70	1/2	15,50	.610	1,2	3/64	●	●	●	●	●		●	●		●	●					●	●	●	●		●			
DNMG150416RP	DNMG434RP	12,70	1/2	15,50	.610	1,6	1/16								●								●	●	●						
DNMG150608RP	DNMG442RP	12,70	1/2	15,50	.610	0,8	1/32	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●			
DNMG150612RP	DNMG443RP	12,70	1/2	15,50	.610	1,2	3/64	●	●	●	●	●	●	●	●	●	●	●					●	●		●		●			
DNMG150616RP	DNMG444RP	12,70	1/2	15,50	.610	1,6	1/16		●	●	●				●									●		●		●			



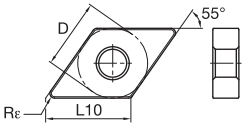
DNMG-UN



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNMG110408UN	DNMG332UN	9,53	3/8	11,63	.458	0,8	1/32
DNMG110412UN	DNMG333UN	9,53	3/8	11,63	.458	1,2	3/64
DNMG150408UN	DNMG432UN	12,70	1/2	15,50	.610	0,8	1/32
DNMG150412UN	DNMG433UN	12,70	1/2	15,50	.610	1,2	3/64
DNMG150416UN	DNMG434UN	12,70	1/2	15,50	.610	1,6	1/16
DNMG150608UN	DNMG442UN	12,70	1/2	15,50	.610	0,8	1/32
DNMG150612UN	DNMG443UN	12,70	1/2	15,50	.610	1,2	3/64
DNMG150616UN	DNMG444UN	12,70	1/2	15,50	.610	1,6	1/16



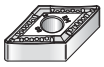
DNMG-UP

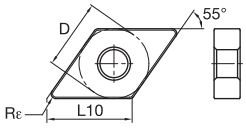


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNMG110408UP	DNMG332UP	9,53	3/8	11,63	.458	0,8	1/32
DNMG110412UP	DNMG333UP	9,53	3/8	11,63	.458	1,2	3/64
DNMG150404UP	DNMG431UP	12,70	1/2	15,50	.610	0,4	1/64
DNMG150408UP	DNMG432UP	12,70	1/2	15,50	.610	0,8	1/32
DNMG150412UP	DNMG433UP	12,70	1/2	15,50	.610	1,2	3/64
DNMG150604UP	DNMG441UP	12,70	1/2	15,50	.610	0,4	1/64
DNMG150608UP	DNMG442UP	12,70	1/2	15,50	.610	0,8	1/32
DNMG150612UP	DNMG443UP	12,70	1/2	15,50	.610	1,2	3/64

● first choice
○ alternate choice

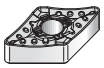
DNMM-RM

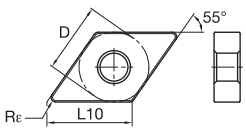




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMM150408RM	DNMM432RM	12,70	1/2	15,50	.610	0,8	1/32			●																				
DNMM150412RM	DNMM433RM	12,70	1/2	15,50	.610	1,2	3/64			●																				
DNMM150608RM	DNMM442RM	12,70	1/2	15,50	.610	0,8	1/32		●	●	●																			
DNMM150612RM	DNMM443RM	12,70	1/2	15,50	.610	1,2	3/64		●	●	●	●																		
DNMM150616RM	DNMM444RM	12,70	1/2	15,50	.610	1,6	1/16		●	●																				

DNMM-RP

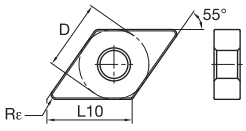




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMM150608RP	DNMM442RP	12,70	1/2	15,50	.610	0,8	1/32		●	●							●													
DNMM150612RP	DNMM443RP	12,70	1/2	15,50	.610	1,2	3/64		●	●							●													
DNMM150616RP	DNMM444RP	12,70	1/2	15,50	.610	1,6	1/16		●	●																				

DNMP

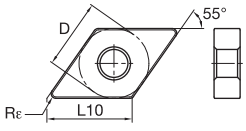




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMP150404	DNMP431	12,70	1/2	15,50	.610	0,4	1/64													●	●									
DNMP150408	DNMP432	12,70	1/2	15,50	.610	0,8	1/32													●	●									
DNMP150412	DNMP433	12,70	1/2	15,50	.610	1,2	3/64														●									

DNMP-K





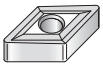
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMP110408K	DNMP332K	9,53	3/8	11,63	.458	0,8	1/32		●																					
DNMP150404K	DNMP431K	12,70	1/2	15,50	.610	0,4	1/64			●											●									
DNMP150408K	DNMP432K	12,70	1/2	15,50	.610	0,8	1/32		●	●											●									
DNMP150412K	DNMP433K	12,70	1/2	15,50	.610	1,2	3/64			●																				
DNMP190608K	DNMP542K	15,88	5/8	19,38	.763	0,8	1/32													●										

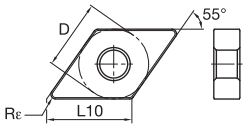
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

Inserts

● first choice
○ alternate choice

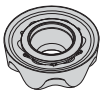
DNMS

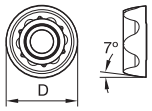




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DNMS150408	DNMS432	12,70	1/2	15,50	.610	0,8	1/32														●								●		

RCGX-LF



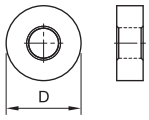


beyond BLAST™

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGX190600ELF	RCGX64ELF	19,05	3/4	–	–	–	–												●				●								

RNMA

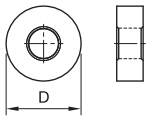




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMA090300	RNMA32	9,53	3/8	–	–	–	–														●										
RNMA120400	RNMA43	12,70	1/2	–	–	–	–						●	●	●						●										
RNMA150600	RNMA54	15,88	5/8	–	–	–	–														●										
RNMA190600	RNMA64	19,05	3/4	–	–	–	–														●										
RNMA250900	RNMA86	25,40	1	–	–	–	–														●										

RNMG

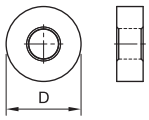




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMG190600	RNMG64	19,05	3/4	–	–	–	–			●		●								●											
RNMG250900	RNMG86	25,40	1	–	–	–	–					●																			

RNMG-RN

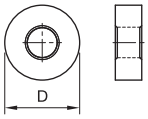




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RNMG090300RN	RNMG32RN	9,53	3/8	–	–	–	–		●	●																					
RNMG120400RN	RNMG43RN	12,70	1/2	–	–	–	–		●	●	●												●	●	●						
RNMG150600RN	RNMG54RN	15,88	5/8	–	–	–	–		●	●	●																				
RNMG190600RN	RNMG64RN	19,05	3/4	–	–	–	–		●	●	●												●	●							
RNMG250900RN	RNMG86RN	25,40	1	–	–	–	–		●	●	●																				

● first choice
○ alternate choice

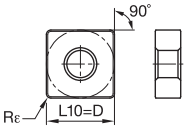




RNMG-UN

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P								●	●	●	●	●																		●	●
M																●	●	●					●	●		●	●				
K													●	●	●																	●
N																													●			
S																			●	●	●	●	●	●	●	●	●	●				
H																																
RNMG120400UN	RNMG43UN	12,70	1/2	–	–	–	–						●	●	●																	

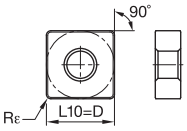




SNGG-FS

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGG090308FS	SNGG322FS	9,53	3/8	9,53	.375	0,8	1/32																●			●					
SNGG120408FS	SNGG432FS	12,70	1/2	12,70	.500	0,8	1/32																●		●						

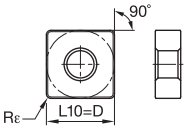




SNGG-LF

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGG090308LF	SNGG322LF	9,53	3/8	9,53	.375	0,8	1/32													●			●	●							
SNGG120408LF	SNGG432LF	12,70	1/2	12,70	.500	0,8	1/32													●				●							
SNGG150612LF	SNGG543LF	15,88	5/8	15,88	.625	1,2	3/64																	●							





SNGP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNGP120404	SNGP431	12,70	1/2	12,70	.500	0,4	1/64																●	●					●		
SNGP120408	SNGP432	12,70	1/2	12,70	.500	0,8	1/32																●	●					●		


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

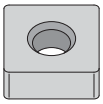

B24–B31

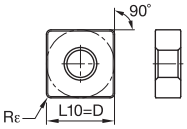

B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

SNMA

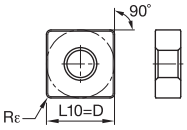




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMA120408	SNMA432	12,70	1/2	12,70	.500	0,8	1/32
SNMA120412	SNMA433	12,70	1/2	12,70	.500	1,2	3/64
SNMA120416	SNMA434	12,70	1/2	12,70	.500	1,6	1/16
SNMA150612	SNMA543	15,88	5/8	15,88	.625	1,2	3/64
SNMA150616	SNMA544	15,88	5/8	15,88	.625	1,6	1/16
SNMA190612	SNMA643	19,05	3/4	19,05	.750	1,2	3/64
SNMA190616	SNMA644	19,05	3/4	19,05	.750	1,6	1/16

SNMG

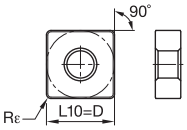




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG120408	SNMG432	12,70	1/2	12,70	.500	0,8	1/32
SNMG120412	SNMG433	12,70	1/2	12,70	.500	1,2	3/64
SNMG120416B	SNMG434	12,70	1/2	12,70	.500	1,6	1/16
SNMG190612	SNMG643	19,05	3/4	19,05	.750	1,2	3/64
SNMG190616B	SNMG644	19,05	3/4	19,05	.750	1,6	1/16
SNMG250924	SNMG866	25,40	1	25,40	1.000	2,4	3/32

SNMG-FF

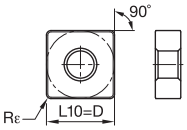




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG090304FF	SNMG321FF	9,53	3/8	9,53	.375	0,4	1/64
SNMG090308FF	SNMG322FF	9,53	3/8	9,53	.375	0,8	1/32
SNMG120404FF	SNMG431FF	12,70	1/2	12,70	.500	0,4	1/64
SNMG120408FF	SNMG432FF	12,70	1/2	12,70	.500	0,8	1/32

SNMG-FN

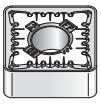


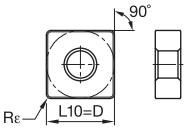


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG090304FN	SNMG321FN	9,53	3/8	9,53	.375	0,4	1/64
SNMG090308FN	SNMG322FN	9,53	3/8	9,53	.375	0,8	1/32
SNMG120404FN	SNMG431FN	12,70	1/2	12,70	.500	0,4	1/64
SNMG120408FN	SNMG432FN	12,70	1/2	12,70	.500	0,8	1/32
SNMG120412FN	SNMG433FN	12,70	1/2	12,70	.500	1,2	3/64
SNMG120416FN	SNMG434FN	12,70	1/2	12,70	.500	1,6	1/16

● first choice
○ alternate choice

SNMG-FP

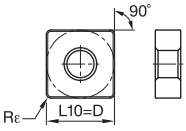




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120404FP	SNMG431FP	12,70	1/2	12,70	.500	0,4	1/64									●							●	●						
SNMG120408FP	SNMG432FP	12,70	1/2	12,70	.500	0,8	1/32									●							●	●					●	
SNMG120412FP	SNMG433FP	12,70	1/2	12,70	.500	1,2	3/64									●							●	●						

SNMG-FW

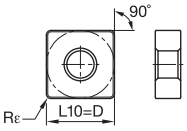




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408FW	SNMG432FW	12,70	1/2	12,70	.500	0,8	1/32	●	●																				●	
SNMG120412FW	SNMG433FW	12,70	1/2	12,70	.500	1,2	3/64	●	●																				●	

SNMG-MN





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG090304MN	SNMG321MN	9,53	3/8	9,53	.375	0,4	1/64			●																				
SNMG090308MN	SNMG322MN	9,53	3/8	9,53	.375	0,8	1/32		●	●	●																			
SNMG090312MN	SNMG323MN	9,53	3/8	9,53	.375	1,2	3/64		●	●																				
SNMG120404MN	SNMG431MN	12,70	1/2	12,70	.500	0,4	1/64		●	●	●																			
SNMG120408MN	SNMG432MN	12,70	1/2	12,70	.500	0,8	1/32		●	●	●	●																		
SNMG120412MN	SNMG433MN	12,70	1/2	12,70	.500	1,2	3/64		●	●	●	●																		
SNMG120416MN	SNMG434MN	12,70	1/2	12,70	.500	1,6	1/16		●	●																				
SNMG150612MN	SNMG543MN	15,88	5/8	15,88	.625	1,2	3/64		●	●		●																		
SNMG150616MN	SNMG544MN	15,88	5/8	15,88	.625	1,6	1/16			●																				
SNMG190612MN	SNMG643MN	19,05	3/4	19,05	.750	1,2	3/64		●	●		●																		
SNMG190616MN	SNMG644MN	19,05	3/4	19,05	.750	1,6	1/16			●																				


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

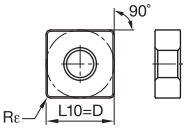

B24–B31


B32–B37

● first choice
○ alternate choice

SNMG-MP

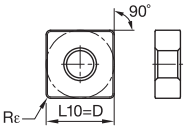




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MP	SNMG432MP	12,70	1/2	12,70	.500	0,8	1/32									●	●	●					●	●							
SNMG120412MP	SNMG433MP	12,70	1/2	12,70	.500	1,2	3/64									●	●	●					●	●		●	●				
SNMG120416MP	SNMG434MP	12,70	1/2	12,70	.500	1,6	1/16										●	●					●	●							
SNMG150608MP	SNMG542MP	15,88	5/8	15,88	.625	0,8	1/32									●	●														
SNMG150612MP	SNMG543MP	15,88	5/8	15,88	.625	1,2	3/64									●	●						●	●							
SNMG150616MP	SNMG544MP	15,88	5/8	15,88	.625	1,6	1/16										●						●	●							
SNMG190612MP	SNMG643MP	19,05	3/4	19,05	.750	1,2	3/64									●	●	●					●	●							
SNMG190616MP	SNMG644MP	19,05	3/4	19,05	.750	1,6	1/16										●	●					●	●							

SNMG-MS

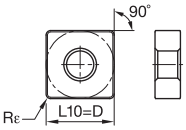




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MS	SNMG432MS	12,70	1/2	12,70	.500	0,8	1/32													●			●		●	●		●			
SNMG120412MS	SNMG433MS	12,70	1/2	12,70	.500	1,2	3/64																●		●	●		●			
SNMG150608MS	SNMG542MS	15,88	5/8	15,88	.625	0,8	1/32																			●		●			
SNMG150612MS	SNMG543MS	15,88	5/8	15,88	.625	1,2	3/64																			●		●			
SNMG190612MS	SNMG643MS	19,05	3/4	19,05	.750	1,2	3/64																●		●	●		●			

SNMG-MW

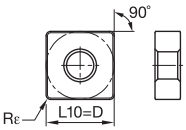




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408MW	SNMG432MW	12,70	1/2	12,70	.500	0,8	1/32		●	●																					
SNMG120412MW	SNMG433MW	12,70	1/2	12,70	.500	1,2	3/64		●	●																					

SNMG-P



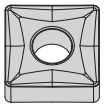


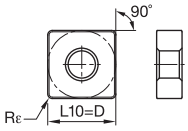
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408P	SNMG432P	12,70	1/2	12,70	.500	0,8	1/32																●	●							
SNMG120412P	SNMG433P	12,70	1/2	12,70	.500	1,2	3/64																●	●							

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

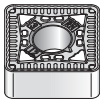
SNMG-RM

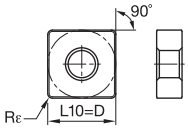




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG190612RM	SNMG643RM	19,05	3/4	19,05	.750	1,2	3/64
SNMG190616RM	SNMG644RM	19,05	3/4	19,05	.750	1,6	1/16
SNMG250924RM	SNMG866RM	25,40	1	25,40	1.000	2,4	3/32

SNMG-RN

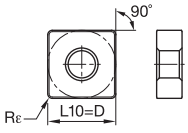




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG090412RN	SNMG333RN	9,53	3/8	9,53	.375	1,2	3/64
SNMG120408RN	SNMG432RN	12,70	1/2	12,70	.500	0,8	1/32
SNMG120412RN	SNMG433RN	12,70	1/2	12,70	.500	1,2	3/64
SNMG120416RN	SNMG434RN	12,70	1/2	12,70	.500	1,6	1/16
SNMG150608RN	SNMG542RN	15,88	5/8	15,88	.625	0,8	1/32
SNMG150612RN	SNMG543RN	15,88	5/8	15,88	.625	1,2	3/64
SNMG150616RN	SNMG544RN	15,88	5/8	15,88	.625	1,6	1/16
SNMG190608RN	SNMG642RN	19,05	3/4	19,05	.750	0,8	1/32
SNMG190612RN	SNMG643RN	19,05	3/4	19,05	.750	1,2	3/64
SNMG190616RN	SNMG644RN	19,05	3/4	19,05	.750	1,6	1/16
SNMG190624RN	SNMG646RN	19,05	3/4	19,05	.750	2,4	3/32
SNMG250924RN	SNMG866RN	25,40	1	25,40	1.000	2,4	3/32

SNMG-RP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMG120408RP	SNMG432RP	12,70	1/2	12,70	.500	0,8	1/32
SNMG120412RP	SNMG433RP	12,70	1/2	12,70	.500	1,2	3/64
SNMG120416RP	SNMG434RP	12,70	1/2	12,70	.500	1,6	1/16
SNMG150612RP	SNMG543RP	15,88	5/8	15,88	.625	1,2	3/64
SNMG150616RP	SNMG544RP	15,88	5/8	15,88	.625	1,6	1/16
SNMG190612RP	SNMG643RP	19,05	3/4	19,05	.750	1,2	3/64
SNMG190616RP	SNMG644RP	19,05	3/4	19,05	.750	1,6	1/16


C2–C70


C72–C118


C119–C129


C130–C161

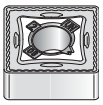
beyond
B10–B23


B24–B31

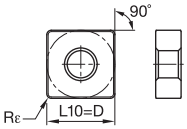

B32–B37

Inserts

● first choice
○ alternate choice



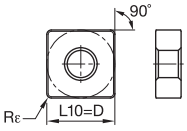
SNMG-UN



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408UN	SNMG432UN	12,70	1/2	12,70	.500	0,8	1/32						●	●	●															
SNMG120412UN	SNMG433UN	12,70	1/2	12,70	.500	1,2	3/64						●	●	●															
SNMG120416UN	SNMG434UN	12,70	1/2	12,70	.500	1,6	1/16						●	●	●															
SNMG150612UN	SNMG543UN	15,88	5/8	15,88	.625	1,2	3/64						●	●	●															
SNMG150616UN	SNMG544UN	15,88	5/8	15,88	.625	1,6	1/16						●	●	●															
SNMG190612UN	SNMG643UN	19,05	3/4	19,05	.750	1,2	3/64						●	●	●															
SNMG190616UN	SNMG644UN	19,05	3/4	19,05	.750	1,6	1/16						●	●	●															



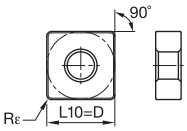
SNMG-UP



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMG120408UP	SNMG432UP	12,70	1/2	12,70	.500	0,8	1/32									●	●	●						●						
SNMG120412UP	SNMG433UP	12,70	1/2	12,70	.500	1,2	3/64									●	●	●						●						
SNMG120416UP	SNMG434UP	12,70	1/2	12,70	.500	1,6	1/16									●	●	●												
SNMG150612UP	SNMG543UP	15,88	5/8	15,88	.625	1,2	3/64									●	●	●					●	●						
SNMG190612UP	SNMG643UP	19,05	3/4	19,05	.750	1,2	3/64									●	●	●												



SNMM-RH

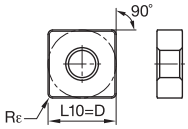


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMM190612RH	SNMM643RH	19,05	3/4	19,05	.750	1,2	3/64		●	●	●																			
SNMM190616RH	SNMM644RH	19,05	3/4	19,05	.750	1,6	1/16		●	●	●	●																		
SNMM190624RH	SNMM646RH	19,05	3/4	19,05	.750	2,4	3/32		●	●	●	●																		
SNMM250724RH	SNMM856RH	25,40	1	25,40	1.000	2,4	3/32		●	●	●	●																		
SNMM250732RH	SNMM858RH	25,40	1	25,40	1.000	3,2	1/8				●																			
SNMM250924RH	SNMM866RH	25,40	1	25,40	1.000	2,4	3/32		●	●	●	●																		

● first choice
○ alternate choice

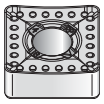
SNMM-RM

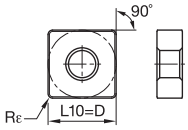




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMM120408RM	SNMM432RM	12,70	1/2	12,70	.500	0,8	1/32			●	●																			
SNMM120412RM	SNMM433RM	12,70	1/2	12,70	.500	1,2	3/64			●																				
SNMM120416RM	SNMM434RM	12,70	1/2	12,70	.500	1,6	1/16			●	●																			
SNMM150612RM	SNMM543RM	15,88	5/8	15,88	.625	1,2	3/64		●	●																				
SNMM150616RM	SNMM544RM	15,88	5/8	15,88	.625	1,6	1/16		●	●	●																			
SNMM190612RM	SNMM643RM	19,05	3/4	19,05	.750	1,2	3/64		●	●	●	●																		
SNMM190616RM	SNMM644RM	19,05	3/4	19,05	.750	1,6	1/16		●	●	●																			
SNMM190624RM	SNMM646RM	19,05	3/4	19,05	.750	2,4	3/32			●	●																			
SNMM250724RM	SNMM856RM	25,40	1	25,40	1.000	2,4	3/32		●	●	●																			
SNMM250924RM	SNMM866RM	25,40	1	25,40	1.000	2,4	3/32		●	●	●	●																		

SNMM-RP

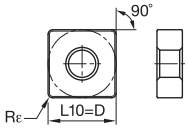




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMM120408RP	SNMM432RP	12,70	1/2	12,70	.500	0,8	1/32			●		●				●	●	●												
SNMM120412RP	SNMM433RP	12,70	1/2	12,70	.500	1,2	3/64			●		●				●	●													
SNMM150612RP	SNMM543RP	15,88	5/8	15,88	.625	1,2	3/64			●		●					●													
SNMM150616RP	SNMM544RP	15,88	5/8	15,88	.625	1,6	1/16		●								●													
SNMM190612RP	SNMM643RP	19,05	3/4	19,05	.750	1,2	3/64			●		●					●													
SNMM190616RP	SNMM644RP	19,05	3/4	19,05	.750	1,6	1/16			●		●					●													
SNMM190624RP	SNMM646RP	19,05	3/4	19,05	.750	2,4	3/32			●							●													
SNMM250724RP	SNMM856RP	25,40	1	25,40	1.000	2,4	3/32			●		●					●													
SNMM250924RP	SNMM866RP	25,40	1	25,40	1.000	2,4	3/32			●							●													

SNMP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SNMP120408	SNMP432	12,70	1/2	12,70	.500	0,8	1/32														●									
SNMP150612	SNMP543	15,88	5/8	15,88	.625	1,2	3/64														●									
SNMP190612	SNMP643	19,05	3/4	19,05	.750	1,2	3/64													●	●									

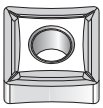
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

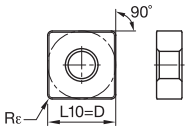
Inserts

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																	●		●
M										●	●	●				●	●		●	●					
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

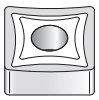
SNMP-K

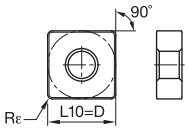




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMP120408K	SNMP432K	12,70	1/2	12,70	.500	0,8	1/32

SNMS

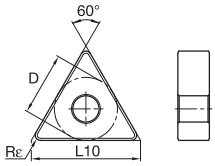




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMS120408	SNMS432	12,70	1/2	12,70	.500	0,8	1/32
SNMS120412	SNMS433	12,70	1/2	12,70	.500	1,2	3/64
SNMS190612	SNMS643	19,05	3/4	19,05	.750	1,2	3/64

TNGG-FS

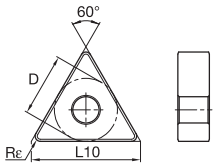




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGG160402FS	TNGG3305FS	9,53	3/8	16,50	.650	0,2	.008
TNGG160404FS	TNGG331FS	9,53	3/8	16,50	.650	0,4	1/64
TNGG160408FS	TNGG332FS	9,53	3/8	16,50	.650	0,8	1/32
TNGG220408FS	TNGG432FS	12,70	1/2	22,00	.866	0,8	1/32

TNGG-LF



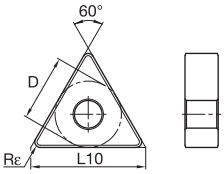


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGG160402LF	TNGG3305LF	9,53	3/8	16,50	.650	0,2	.008
TNGG160404LF	TNGG331LF	9,53	3/8	16,50	.650	0,4	1/64
TNGG160408LF	TNGG332LF	9,53	3/8	16,50	.650	0,8	1/32

● first choice
○ alternate choice

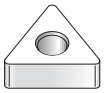
TNGP

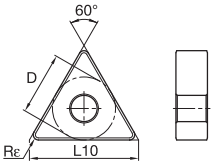




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNGP160402	TNGP3305	9,53	3/8	16,50	.650	0,2	.008																●	●				●			
TNGP160404	TNGP331	9,53	3/8	16,50	.650	0,4	1/64																●	●				●			
TNGP160408	TNGP332	9,53	3/8	16,50	.650	0,8	1/32																●	●				●			

TNMA

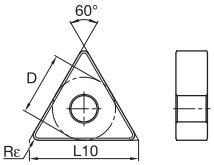




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMA160408	TNMA332	9,53	3/8	16,50	.650	0,8	1/32						●	●	●						●										
TNMA160412	TNMA333	9,53	3/8	16,50	.650	1,2	3/64						●	●	●																
TNMA160416	TNMA334	9,53	3/8	16,50	.650	1,6	1/16							●	●																
TNMA220408	TNMA432	12,70	1/2	22,00	.866	0,8	1/32						●	●	●						●										
TNMA220412	TNMA433	12,70	1/2	22,00	.866	1,2	3/64						●	●	●						●										
TNMA220416	TNMA434	12,70	1/2	22,00	.866	1,6	1/16							●	●																
TNMA270616	TNMA544	15,88	5/8	27,50	1.083	1,6	1/16							●	●						●										

TNMG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408B	TNMG332	9,53	3/8	16,50	.650	0,8	1/32														●										
TNMG160412	TNMG333	9,53	3/8	16,50	.650	1,2	3/64														●										
TNMG220408	TNMG432	12,70	1/2	22,00	.866	0,8	1/32														●										
TNMG220412	TNMG433	12,70	1/2	22,00	.866	1,2	3/64														●										
TNMG220416	TNMG434	12,70	1/2	22,00	.866	1,6	1/16														●										
TNMG330924	TNMG666	19,05	3/4	33,00	1.299	2,4	3/32			●		●												●							


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23


B24–B31


B32–B37

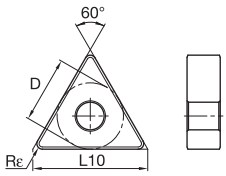
Inserts

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

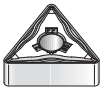
TNMG-CT

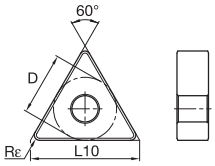




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMG220408CT	TNMG432CT	12,70	1/2	22,00	.866	0,8	1/32
TNMG220412CT	TNMG433CT	12,70	1/2	22,00	.866	1,2	3/64

TNMG-FF

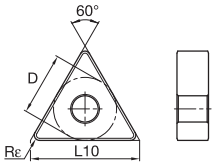




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMG110304FF	TNMG221FF	6,35	1/4	11,00	.433	0,4	1/64
TNMG110308FF	TNMG222FF	6,35	1/4	11,00	.433	0,8	1/32
TNMG160404FF	TNMG331FF	9,53	3/8	16,50	.650	0,4	1/64
TNMG160408FF	TNMG332FF	9,53	3/8	16,50	.650	0,8	1/32

TNMG-FN

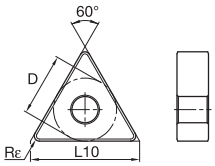




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMG110304FN	TNMG221FN	6,35	1/4	11,00	.433	0,4	1/64
TNMG110308FN	TNMG222FN	6,35	1/4	11,00	.433	0,8	1/32
TNMG160404FN	TNMG331FN	9,53	3/8	16,50	.650	0,4	1/64
TNMG160408FN	TNMG332FN	9,53	3/8	16,50	.650	0,8	1/32
TNMG160412FN	TNMG333FN	9,53	3/8	16,50	.650	1,2	3/64
TNMG220404FN	TNMG431FN	12,70	1/2	22,00	.866	0,4	1/64
TNMG220408FN	TNMG432FN	12,70	1/2	22,00	.866	0,8	1/32
TNMG220412FN	TNMG433FN	12,70	1/2	22,00	.866	1,2	3/64

TNMG-FP

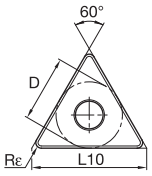




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMG160404FP	TNMG331FP	9,53	3/8	16,50	.650	0,4	1/64
TNMG160408FP	TNMG332FP	9,53	3/8	16,50	.650	0,8	1/32
TNMG160412FP	TNMG333FP	9,53	3/8	16,50	.650	1,2	3/64
TNMG220404FP	TNMG431FP	12,70	1/2	22,00	.866	0,4	1/64
TNMG220408FP	TNMG432FP	12,70	1/2	22,00	.866	0,8	1/32

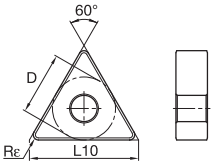
● first choice
○ alternate choice

TNMG-FW

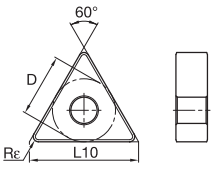
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404FW	TNMG331FW	9,53	3/8	16,50	.650	0,4	1/64	●	●														●	●					●	
TNMG160408FW	TNMG332FW	9,53	3/8	16,50	.650	0,8	1/32	●	●														●	●					●	
TNMG160412FW	TNMG333FW	9,53	3/8	16,50	.650	1,2	3/64	●	●															●					●	

TNMG-MN

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404MN	TNMG331MN	9,53	3/8	16,50	.650	0,4	1/64	●	●	●	●																			
TNMG160408MN	TNMG332MN	9,53	3/8	16,50	.650	0,8	1/32	●	●	●	●																			
TNMG160412MN	TNMG333MN	9,53	3/8	16,50	.650	1,2	3/64	●	●	●	●	●																		
TNMG220404MN	TNMG431MN	12,70	1/2	22,00	.866	0,4	1/64		●	●	●																			
TNMG220408MN	TNMG432MN	12,70	1/2	22,00	.866	0,8	1/32		●	●	●	●																		
TNMG220412MN	TNMG433MN	12,70	1/2	22,00	.866	1,2	3/64		●	●	●	●																		
TNMG220416MN	TNMG434MN	12,70	1/2	22,00	.866	1,6	1/16			●																				

TNMG-MP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404MP	TNMG331MP	9,53	3/8	16,50	.650	0,4	1/64			●						●	●	●					●	●						
TNMG160408MP	TNMG332MP	9,53	3/8	16,50	.650	0,8	1/32		●	●						●	●	●					●	●						
TNMG160412MP	TNMG333MP	9,53	3/8	16,50	.650	1,2	3/64									●	●						●	●						
TNMG220408MP	TNMG432MP	12,70	1/2	22,00	.866	0,8	1/32									●	●						●	●						
TNMG220412MP	TNMG433MP	12,70	1/2	22,00	.866	1,2	3/64									●	●						●	●						
TNMG220416MP	TNMG434MP	12,70	1/2	22,00	.866	1,6	1/16										●						●	●						


C2–C70

C72–C118

C119–C129

C130–C161


B10–B23

B24–B31

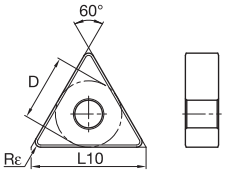
B32–B37

● first choice
○ alternate choice

P		●	●	●	●	●																							●	●
M												●	●	●						●	●		●	●							
K							●	●	●																						●
N																													●		
S															●	●	●	●	●	●	●	●	●	●							
H																															

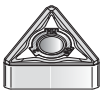
TNMG-MS

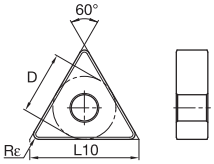




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160402MS	TNMG3305MS	9,53	3/8	16,50	.650	0,2	.008																●		●	●		●			
TNMG160404MS	TNMG331MS	9,53	3/8	16,50	.650	0,4	1/64													●			●		●	●		●			
TNMG160408MS	TNMG332MS	9,53	3/8	16,50	.650	0,8	1/32																●		●	●		●			
TNMG220404MS	TNMG431MS	12,70	1/2	22,00	.866	0,4	1/64																●		●	●		●			
TNMG220408MS	TNMG432MS	12,70	1/2	22,00	.866	0,8	1/32													●			●		●	●		●			
TNMG220412MS	TNMG433MS	12,70	1/2	22,00	.866	1,2	3/64													●			●		●	●		●			
TNMG270608MS	TNMG542MS	15,88	5/8	27,50	1.083	0,8	1/32													●						●		●			
TNMG270616MS	TNMG544MS	15,88	5/8	27,50	1.083	1,6	1/16													●											

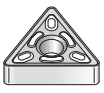
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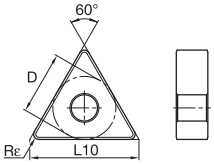




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408MW	TNMG332MW	9,53	3/8	16,50	.650	0,8	1/32	●	●	●																					
TNMG160412MW	TNMG333MW	9,53	3/8	16,50	.650	1,2	3/64	●	●	●																					

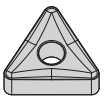
TNMG-P

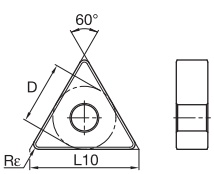




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160404P	TNMG331P	9,53	3/8	16,50	.650	0,4	1/64																●	●							
TNMG160408P	TNMG332P	9,53	3/8	16,50	.650	0,8	1/32													●			●	●							
TNMG220404P	TNMG431P	12,70	1/2	22,00	.866	0,4	1/64																●	●							
TNMG220408P	TNMG432P	12,70	1/2	22,00	.866	0,8	1/32																●	●							
TNMG220412P	TNMG433P	12,70	1/2	22,00	.866	1,2	3/64																●	●					●		

TNMG-RM

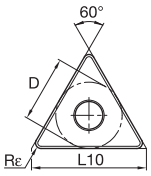




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG330924RM	TNMG666RM	19,05	3/4	32,99	1.299	2,4	3/32				●	●											●								

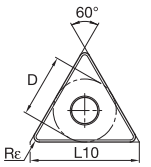
● first choice
○ alternate choice

TNMG-RN

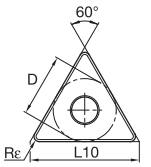
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408RN	TNMG332RN	9,53	3/8	16,50	.650	0,8	1/32		●	●	●																				
TNMG160412RN	TNMG333RN	9,53	3/8	16,50	.650	1,2	3/64		●	●	●																				
TNMG220408RN	TNMG432RN	12,70	1/2	22,00	.866	0,8	1/32		●	●	●	●																			
TNMG220412RN	TNMG433RN	12,70	1/2	22,00	.866	1,2	3/64		●	●	●	●																			
TNMG220416RN	TNMG434RN	12,70	1/2	22,00	.866	1,6	1/16		●	●																					
TNMG270608RN	TNMG542RN	15,88	5/8	27,50	1.083	0,8	1/32		●	●	●																				
TNMG270612RN	TNMG543RN	15,88	5/8	27,50	1.083	1,2	3/64		●	●	●	●																			
TNMG270616RN	TNMG544RN	15,88	5/8	27,50	1.083	1,6	1/16		●	●	●																				
TNMG330924RN	TNMG666RN	19,05	3/4	33,00	1.299	2,4	3/32		●	●	●	●																			

TNMG-RP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408RP	TNMG332RP	9,53	3/8	16,50	.650	0,8	1/32	●	●	●	●		●	●	●	●	●						●	●	●	●		●			
TNMG160412RP	TNMG333RP	9,53	3/8	16,50	.650	1,2	3/64	●	●	●					●		●	●								●		●			
TNMG160416RP	TNMG334RP	9,53	3/8	16,50	.650	1,6	1/16		●						●		●							●							
TNMG220408RP	TNMG432RP	12,70	1/2	22,00	.866	0,8	1/32		●	●	●	●		●	●	●	●						●	●	●	●		●			
TNMG220412RP	TNMG433RP	12,70	1/2	22,00	.866	1,2	3/64		●	●	●	●		●	●	●	●						●	●	●	●		●			
TNMG220416RP	TNMG434RP	12,70	1/2	22,00	.866	1,6	1/16		●	●				●	●		●						●		●	●		●			
TNMG220432RP	TNMG438RP	12,70	1/2	22,00	.866	3,2	1/8			●	●				●								●		●						
TNMG270612RP	TNMG543RP	15,88	5/8	27,50	1.083	1,2	3/64		●	●					●	●	●	●					●	●	●	●		●			
TNMG270616RP	TNMG544RP	15,88	5/8	27,50	1.083	1,6	1/16			●					●	●	●	●													
TNMG330924RP	TNMG666RP	19,05	3/4	33,00	1.299	2,4	3/32			●		●			●		●							●							

TNMG-UN

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMG160408UN	TNMG332UN	9,53	3/8	16,50	.650	0,8	1/32						●	●	●																
TNMG160412UN	TNMG333UN	9,53	3/8	16,50	.650	1,2	3/64						●	●	●																
TNMG160416UN	TNMG334UN	9,53	3/8	16,50	.650	1,6	1/16						●	●	●																
TNMG220408UN	TNMG432UN	12,70	1/2	22,00	.866	0,8	1/32						●	●	●																
TNMG220412UN	TNMG433UN	12,70	1/2	22,00	.866	1,2	3/64						●	●	●																
TNMG220416UN	TNMG434UN	12,70	1/2	22,00	.866	1,6	1/16							●	●																


C2–C70

C72–C118

C119–C129

C130–C161
beyond
B10–B23

B24–B31

B32–B37

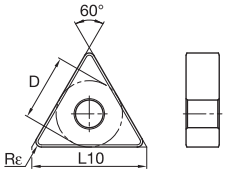
Inserts

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●				●	●		●	●					
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

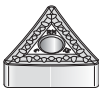
TNMG-UP

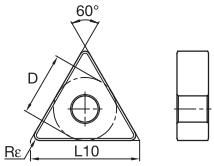




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMG160404UP	TNMG331UP	9,53	3/8	16,50	.650	0,4	1/64
TNMG160408UP	TNMG332UP	9,53	3/8	16,50	.650	0,8	1/32
TNMG160412UP	TNMG333UP	9,53	3/8	16,50	.650	1,2	3/64
TNMG220408UP	TNMG432UP	12,70	1/2	22,00	.866	0,8	1/32
TNMG220412UP	TNMG433UP	12,70	1/2	22,00	.866	1,2	3/64

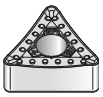
TNMM-RM

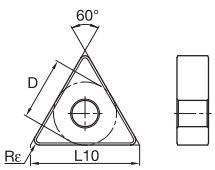




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMM160408RM	TNMM332RM	9,53	3/8	16,50	.650	0,8	1/32
TNMM160412RM	TNMM333RM	9,53	3/8	16,50	.650	1,2	3/64
TNMM220408RM	TNMM432RM	12,70	1/2	22,00	.866	0,8	1/32
TNMM220412RM	TNMM433RM	12,70	1/2	22,00	.866	1,2	3/64
TNMM220416RM	TNMM434RM	12,70	1/2	22,00	.866	1,6	1/16
TNMM270612RM	TNMM543RM	15,88	5/8	27,50	1.083	1,2	3/64
TNMM270616RM	TNMM544RM	15,88	5/8	27,50	1.083	1,6	1/16

TNMM-RP

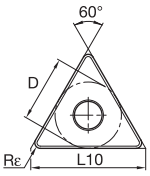




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMM160408RP	TNMM332RP	9,53	3/8	16,50	.650	0,8	1/32
TNMM160412RP	TNMM333RP	9,53	3/8	16,50	.650	1,2	3/64
TNMM220408RP	TNMM432RP	12,70	1/2	22,00	.866	0,8	1/32
TNMM220412RP	TNMM433RP	12,70	1/2	22,00	.866	1,2	3/64
TNMM220416RP	TNMM434RP	12,70	1/2	22,00	.866	1,6	1/16
TNMM270616RP	TNMM544RP	15,88	5/8	27,50	1.083	1,6	1/16

● first choice
○ alternate choice

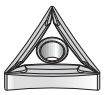
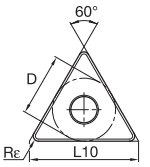
TNMP



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMP160404	**TNMP331**	9,53	3/8	16,50	.650	0,4	1/64													●	●										
TNMP160408	**TNMP332**	9,53	3/8	16,50	.650	0,8	1/32													●	●										
TNMP160416	**TNMP334**	9,53	3/8	16,50	.650	1,6	1/16														●										
TNMP220404	**TNMP431**	12,70	1/2	22,00	.866	0,4	1/64														●										
TNMP220408	**TNMP432**	12,70	1/2	22,00	.866	0,8	1/32													●	●								●		
TNMP220412	**TNMP433**	12,70	1/2	22,00	.866	1,2	3/64														●										
TNMP220416	**TNMP434**	12,70	1/2	22,00	.866	1,6	1/16														●										
TNMP220424	**TNMP436**	12,70	1/2	22,00	.866	2,4	3/32														●										

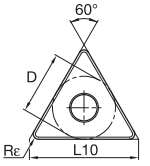
TNMP-K



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMP160404K	**TNMP331K**	9,53	3/8	16,50	.650	0,4	1/64			●																					
TNMP160408K	**TNMP332K**	9,53	3/8	16,50	.650	0,8	1/32		●	●																					
TNMP220408K	**TNMP432K**	12,70	1/2	22,00	.866	0,8	1/32			●																					

TNMS



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TNMS160404	**TNMS331**	9,53	3/8	16,50	.650	0,4	1/64														●								●		
TNMS160408	**TNMS332**	9,53	3/8	16,50	.650	0,8	1/32														●								●		
TNMS220404	**TNMS431**	12,70	1/2	22,00	.866	0,4	1/64														●								●		
TNMS220408	**TNMS432**	12,70	1/2	22,00	.866	0,8	1/32														●								●		
TNMS220412	**TNMS433**	12,70	1/2	22,00	.866	1,2	3/64														●										
TNMS270608	**TNMS542**	15,88	5/8	27,50	1.083	0,8	1/32														●								●		


C2–C70

C72–C118

C119–C129

C130–C161


B10–B23

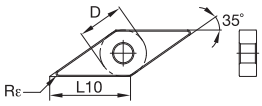
B24–B31

B32–B37

● first choice
○ alternate choice

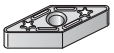
VNGG-FS

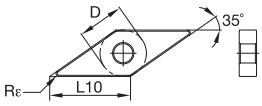




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNGG160401FS	VNGG330FS	9,53	3/8	16,61	.654	0,1	.004																●		●	●		●			
VNGG160402FS	VNGG3305FS	9,53	3/8	16,61	.654	0,2	.008																●		●	●		●			
VNGG160404FS	VNGG331FS	9,53	3/8	16,61	.654	0,4	1/64													●			●		●	●		●			
VNGG160408FS	VNGG332FS	9,53	3/8	16,61	.654	0,8	1/32													●			●		●	●		●			
VNGG160412FS	VNGG333FS	9,53	3/8	16,61	.654	1,2	3/64																●								

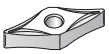
VNGG-LF

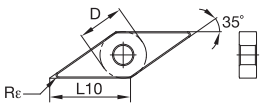




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNGG160402LF	VNGG3305LF	9,53	3/8	16,61	.654	0,2	.008													●			●	●							
VNGG160404LF	VNGG331LF	9,53	3/8	16,61	.654	0,4	1/64													●			●	●							
VNGG160408LF	VNGG332LF	9,53	3/8	16,61	.654	0,8	1/32													●			●	●							
VNGG220408LF	VNGG432LF	12,70	1/2	22,14	.872	0,8	1/32																●	●							

VNGP

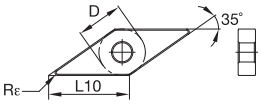




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNGP160401	VNGP330	9,53	3/8	16,61	.654	0,1	.004													●			●	●					●		
VNGP160402	VNGP3305	9,53	3/8	16,61	.654	0,2	.008																●	●					●		
VNGP220404	VNGP431	12,70	1/2	22,14	.872	0,4	1/64																●	●							
VNGP220408	VNGP432	12,70	1/2	22,14	.872	0,8	1/32													●	●		●	●							
VNGP220412	VNGP433	12,70	1/2	22,14	.872	1,2	3/64														●										

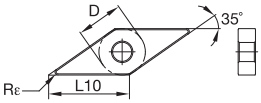
● first choice
○ alternate choice

VNGP-K



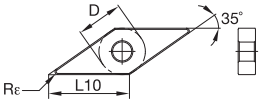
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNGP160404K	VNGP331K	9,53	3/8	16,61	.654	0,4	1/64													●										
VNGP160408K	VNGP332K	9,53	3/8	16,61	.654	0,8	1/32													●										

VNMA



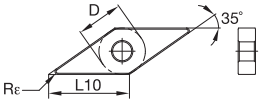
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMA160408	VNMA332	9,53	3/8	16,61	.654	0,8	1/32						●	●	●															

VNMG



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408	VNMG332	9,53	3/8	16,61	.654	0,8	1/32														●									
VNMG160412	VNMG333	9,53	3/8	16,61	.654	1,2	3/64														●									
VNMG220408	VNMG432	12,70	1/2	22,14	.872	0,8	1/32														●									
VNMG220412	VNMG433	12,70	1/2	22,14	.872	1,2	3/64														●									

VNMG-FF



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404FF	VNMG331FF	9,53	3/8	16,61	.654	0,4	1/64	●	●														●	●					●	
VNMG160408FF	VNMG332FF	9,53	3/8	16,61	.654	0,8	1/32	●	●														●	●					●	

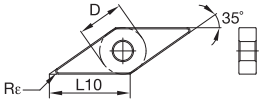
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

VNMG-FN

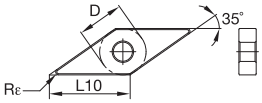




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404FN	VNMG331FN	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408FN	VNMG332FN	9,53	3/8	16,61	.654	0,8	1/32

VNMG-FP

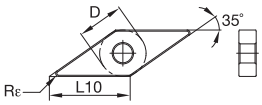




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404FP	VNMG331FP	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408FP	VNMG332FP	9,53	3/8	16,61	.654	0,8	1/32

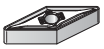
VNMG-MN

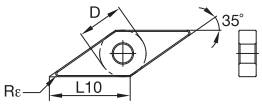




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404MN	VNMG331MN	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408MN	VNMG332MN	9,53	3/8	16,61	.654	0,8	1/32
VNMG160412MN	VNMG333MN	9,53	3/8	16,61	.654	1,2	3/64

VNMG-MP



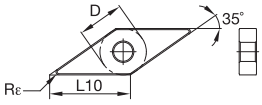


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404MP	VNMG331MP	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408MP	VNMG332MP	9,53	3/8	16,61	.654	0,8	1/32
VNMG160412MP	VNMG333MP	9,53	3/8	16,61	.654	1,2	3/64

● first choice
○ alternate choice

VNMG-MS

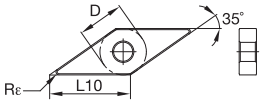




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160401MS	VNMG330MS	9,53	3/8	16,61	.654	0,1	.004													●			●		●	●		●			
VNMG160402MS	VNMG3305MS	9,53	3/8	16,61	.654	0,2	.008													●			●		●	●		●			
VNMG160404MS	VNMG331MS	9,53	3/8	16,61	.654	0,4	1/64													●			●		●	●		●			
VNMG160408MS	VNMG332MS	9,53	3/8	16,61	.654	0,8	1/32													●			●		●	●		●			
VNMG220404MS	VNMG431MS	12,70	1/2	22,14	.872	0,4	1/64																●		●	●		●			
VNMG220408MS	VNMG432MS	12,70	1/2	22,14	.872	0,8	1/32																●		●	●		●			

VNMG-P

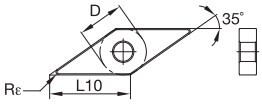




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160404P	VNMG331P	9,53	3/8	16,61	.654	0,4	1/64													●			●	●							
VNMG160408P	VNMG332P	9,53	3/8	16,61	.654	0,8	1/32													●			●	●							

VNMG-RN

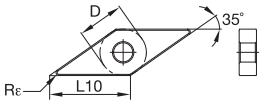




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408RN	VNMG332RN	9,53	3/8	16,61	.654	0,8	1/32		●	●																				
VNMG160412RN	VNMG333RN	9,53	3/8	16,61	.654	1,2	3/64		●	●																				
VNMG220408RN	VNMG432RN	12,70	1/2	22,14	.872	0,8	1/32		●	●	●	●																		
VNMG220412RN	VNMG433RN	12,70	1/2	22,14	.872	1,2	3/64		●	●	●																			

VNMG-RP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VNMG160408RP	VNMG332RP	9,53	3/8	16,61	.654	0,8	1/32		●	●				●	●	●							●	●	●	●		●			
VNMG160412RP	VNMG333RP	9,53	3/8	16,61	.654	1,2	3/64		●	●			●	●	●	●	●						●	●	●	●		●			

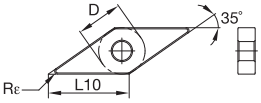
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																	●	●	
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

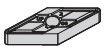
VNMG-UN

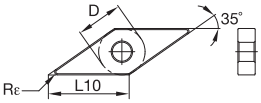




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404UN	VNMG331UN	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408UN	VNMG332UN	9,53	3/8	16,61	.654	0,8	1/32

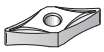
VNMG-UP

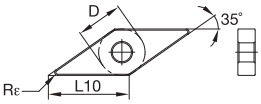




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMG160404UP	VNMG331UP	9,53	3/8	16,61	.654	0,4	1/64
VNMG160408UP	VNMG332UP	9,53	3/8	16,61	.654	0,8	1/32
VNMG160412UP	VNMG333UP	9,53	3/8	16,61	.654	1,2	3/64

VNMP

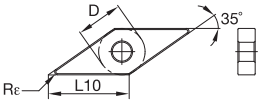




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMP160404	VNMP331	9,53	3/8	16,61	.654	0,4	1/64
VNMP160408	VNMP332	9,53	3/8	16,61	.654	0,8	1/32

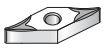
VNMP-K

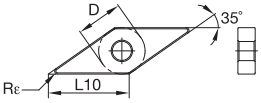




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMP160404K	VNMP331K	9,53	3/8	16,61	.654	0,4	1/64
VNMP160408K	VNMP332K	9,53	3/8	16,61	.654	0,8	1/32

VNMS

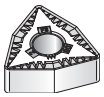
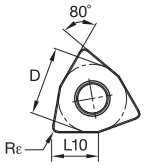




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMS160404	VNMS331	9,53	3/8	16,61	.654	0,4	1/64
VNMS160408	VNMS332	9,53	3/8	16,61	.654	0,8	1/32

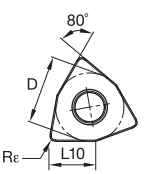
● first choice
○ alternate choice

WNGG-FS

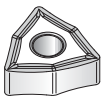
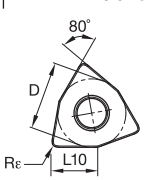
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGG080404FS	WNGG431FS	12,70	1/2	8,69	.342	0,4	1/64																●		●						
WNGG080408FS	WNGG432FS	12,70	1/2	8,69	.342	0,8	1/32																●		●						

WNGG-LF

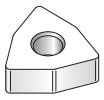
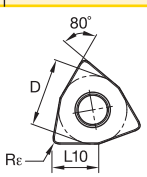
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGG080401LF	WNGG430LF	12,70	1/2	8,69	.342	0,1	.004																●	●							
WNGG080402LF	WNGG4305LF	12,70	1/2	8,69	.342	0,2	.008																●	●							
WNGG080404LF	WNGG431LF	12,70	1/2	8,69	.342	0,4	1/64																●	●							
WNGG080408LF	WNGG432LF	12,70	1/2	8,69	.342	0,8	1/32																●	●							

WNGP-K

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNGP080408K	WNGP432K	12,70	1/2	8,69	.342	0,8	1/32																						●		

WNMA

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMA060408	WNMA332	9,53	3/8	6,52	.257	0,8	1/32						●	●	●																
WNMA060412	WNMA333	9,53	3/8	6,52	.257	1,2	3/64							●	●																
WNMA080408	WNMA432	12,70	1/2	8,69	.342	0,8	1/32						●	●	●																
WNMA080412	WNMA433	12,70	1/2	8,69	.342	1,2	3/64						●	●	●																
WNMA080416	WNMA434	12,70	1/2	8,69	.342	1,6	1/16						●	●	●																


C2–C70

C72–C118

C119–C129

C130–C161
B10–B23

B24–B31

B32–B37

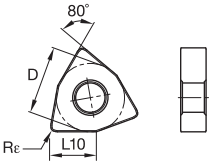
Inserts

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

WNMG-FF

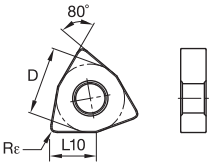




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060404FF	WNMG331FF	9,53	3/8	6,52	.257	0,4	1/64
WNMG060408FF	WNMG332FF	9,53	3/8	6,52	.257	0,8	1/32
WNMG080404FF	WNMG431FF	12,70	1/2	8,69	.342	0,4	1/64
WNMG080408FF	WNMG432FF	12,70	1/2	8,69	.342	0,8	1/32

WNMG-FN

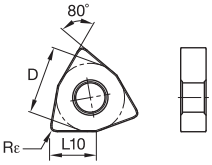




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060404FN	WNMG331FN	9,53	3/8	6,52	.257	0,4	1/64
WNMG060408FN	WNMG332FN	9,53	3/8	6,52	.257	0,8	1/32
WNMG080404FN	WNMG431FN	12,70	1/2	8,69	.342	0,4	1/64
WNMG080408FN	WNMG432FN	12,70	1/2	8,69	.342	0,8	1/32
WNMG080412FN	WNMG433FN	12,70	1/2	8,69	.342	1,2	3/64

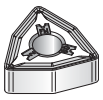
WNMG-FP

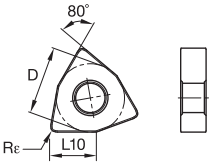




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060404FP	WNMG331FP	9,53	3/8	6,52	.257	0,4	1/64
WNMG060408FP	WNMG332FP	9,53	3/8	6,52	.257	0,8	1/32
WNMG080404FP	WNMG431FP	12,70	1/2	8,69	.342	0,4	1/64
WNMG080408FP	WNMG432FP	12,70	1/2	8,69	.342	0,8	1/32
WNMG080412FP	WNMG433FP	12,70	1/2	8,69	.342	1,2	3/64

WNMG-FW

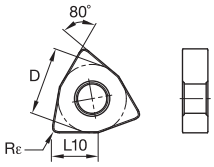




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060404FW	WNMG331FW	9,53	3/8	6,52	.257	0,4	1/64
WNMG060408FW	WNMG332FW	9,53	3/8	6,52	.257	0,8	1/32
WNMG060412FW	WNMG333FW	9,53	3/8	6,52	.257	1,2	3/64
WNMG080404FW	WNMG431FW	12,70	1/2	8,69	.342	0,4	1/64
WNMG080408FW	WNMG432FW	12,70	1/2	8,69	.342	0,8	1/32
WNMG080412FW	WNMG433FW	12,70	1/2	8,69	.342	1,2	3/64

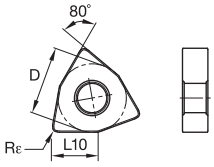
● first choice
○ alternate choice

WNMG-MN

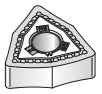
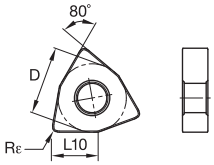
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404MN	WNMG331MN	9,53	3/8	6,52	.257	0,4	1/64		●	●																				
WNMG060408MN	WNMG332MN	9,53	3/8	6,52	.257	0,8	1/32		●	●	●																			
WNMG060412MN	WNMG333MN	9,53	3/8	6,52	.257	1,2	3/64		●	●																				
WNMG080408MN	WNMG432MN	12,70	1/2	8,69	.342	0,8	1/32	●	●	●	●	●																		
WNMG080412MN	WNMG433MN	12,70	1/2	8,69	.342	1,2	3/64	●	●	●		●																		
WNMG080416MN	WNMG434MN	12,70	1/2	8,69	.342	1,6	1/16			●																				

WNMG-MP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404MP	WNMG331MP	9,53	3/8	6,52	.257	0,4	1/64									●	●						●	●						
WNMG060408MP	WNMG332MP	9,53	3/8	6,52	.257	0,8	1/32		●	●						●	●	●					●	●						
WNMG060412MP	WNMG333MP	9,53	3/8	6,52	.257	1,2	3/64										●													
WNMG080408MP	WNMG432MP	12,70	1/2	8,69	.342	0,8	1/32		●	●						●	●	●					●	●						
WNMG080412MP	WNMG433MP	12,70	1/2	8,69	.342	1,2	3/64		●							●	●	●					●	●						

WNMG-MS

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408MS	WNMG332MS	9,53	3/8	6,52	.257	0,8	1/32													●			●		●	●		●		
WNMG080401MS	WNMG430MS	12,70	1/2	8,69	.342	0,1	.004																●		●					
WNMG080402MS	WNMG4305MS	12,70	1/2	8,69	.342	0,2	.008																●		●	●		●		
WNMG080404MS	WNMG431MS	12,70	1/2	8,69	.342	0,4	1/64													●			●		●	●		●		
WNMG080408MS	WNMG432MS	12,70	1/2	8,69	.342	0,8	1/32													●			●		●	●		●		


C2–C70

C72–C118

C119–C129

C130–C161


B10–B23

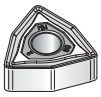
B24–B31

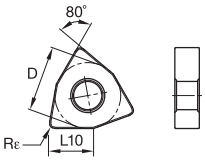
B32–B37

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

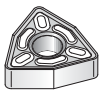
WNMG-MW

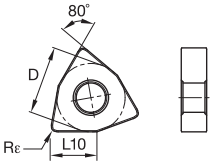




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060408MW	WNMG332MW	9,53	3/8	6,52	.257	0,8	1/32
WNMG060412MW	WNMG333MW	9,53	3/8	6,52	.257	1,2	3/64
WNMG080408MW	WNMG432MW	12,70	1/2	8,69	.342	0,8	1/32
WNMG080412MW	WNMG433MW	12,70	1/2	8,69	.342	1,2	3/64

WNMG-P

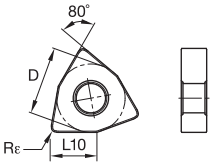




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG080404P	WNMG431P	12,70	1/2	8,69	.342	0,4	1/64
WNMG080408P	WNMG432P	12,70	1/2	8,69	.342	0,8	1/32

WNMG-RN

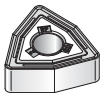
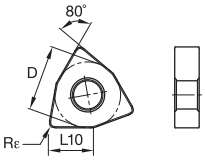




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNMG060408RN	WNMG332RN	9,53	3/8	6,52	.257	0,8	1/32
WNMG060412RN	WNMG333RN	9,53	3/8	6,52	.257	1,2	3/64
WNMG080408RN	WNMG432RN	12,70	1/2	8,69	.342	0,8	1/32
WNMG080412RN	WNMG433RN	12,70	1/2	8,69	.342	1,2	3/64
WNMG080416RN	WNMG434RN	12,70	1/2	8,69	.342	1,6	1/16

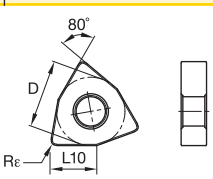
● first choice
○ alternate choice

WNMG-RP

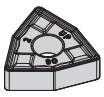
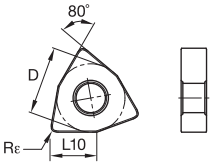
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408RP	WNMG332RP	9,53	3/8	6,52	.257	0,8	1/32		●	●					●	●	●						●	●	●	●		●			
WNMG060412RP	WNMG333RP	9,53	3/8	6,52	.257	1,2	3/64		●	●					●																
WNMG080408RP	WNMG432RP	12,70	1/2	8,69	.342	0,8	1/32	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
WNMG080412RP	WNMG433RP	12,70	1/2	8,69	.342	1,2	3/64	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●		●			
WNMG080416RP	WNMG434RP	12,70	1/2	8,69	.342	1,6	1/16	●	●	●	●				●								●		●	●		●			

WNMG-UN

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060404UN	WNMG331UN	9,53	3/8	6,52	.257	0,4	1/64						●	●	●																
WNMG060408UN	WNMG332UN	9,53	3/8	6,52	.257	0,8	1/32						●	●	●																
WNMG060412UN	WNMG333UN	9,53	3/8	6,52	.257	1,2	3/64						●	●	●																
WNMG080404UN	WNMG431UN	12,70	1/2	8,69	.342	0,4	1/64						●	●	●																
WNMG080408UN	WNMG432UN	12,70	1/2	8,69	.342	0,8	1/32						●	●	●																
WNMG080412UN	WNMG433UN	12,70	1/2	8,69	.342	1,2	3/64						●	●	●																
WNMG080416UN	WNMG434UN	12,70	1/2	8,69	.342	1,6	1/16							●	●																

WNMG-UP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WNMG060408UP	WNMG332UP	9,53	3/8	6,52	.257	0,8	1/32									●	●							●							
WNMG080408UP	WNMG432UP	12,70	1/2	8,69	.342	0,8	1/32									●	●	●					●	●							
WNMG080412UP	WNMG433UP	12,70	1/2	8,69	.342	1,2	3/64									●	●	●					●	●							


C2–C70

C72–C118

C119–C129

C130–C161

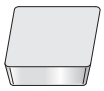

B10–B23

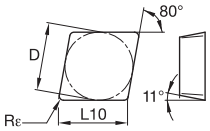
B24–B31

B32–B37

● first choice
○ alternate choice

CPG

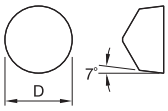




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGN120304	CPG421	12,70	1/2	12,90	.508	0,4	1/64													●	●		●								
CPGN120308	CPG422	12,70	1/2	12,90	.508	0,8	1/32													●	●		●								

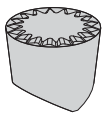
RCGV

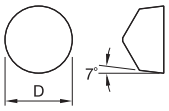




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGV060400	RCGV23	6,35	1/4	–	–	–	–													●			●	●							
RCGV090700	RCGV35	9,53	3/8	–	–	–	–													●			●	●							
RCGV120700	RCGV45	12,70	1/2	–	–	–	–													●			●	●							

RCGV-MP





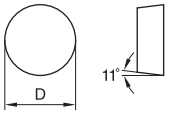
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGX060400MP	RCGV23MP	6,35	1/4	–	–	–	–															●								
RCGX090700MP	RCGV35MP	9,53	3/8	–	–	–	–															●								
RCGX120700MP	RCGV45MP	12,70	1/2	–	–	–	–															●								

● first choice
○ alternate choice

P	●	●	●	●	●														●	●		●	●				●	●
M									●	●	●								●	●								
K						●	●	●																				●
N																											●		
S													●	●	●	●	●	●	●	●	●	●	●	●					
H																													

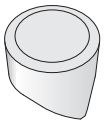
RPG

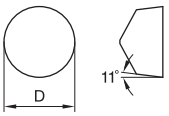




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RPGN120300	RPG42	12,70	1/2	—	—	—	—													●											

RPGV

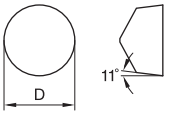




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RPGV060400	RPGV23	6,35	1/4	—	—	—	—																		●						
RPGV090700	RPGV35	9,53	3/8	—	—	—	—													●				●	●						
RPGV120700	RPGV45	12,70	1/2	—	—	—	—																		●						

RPGV-MP

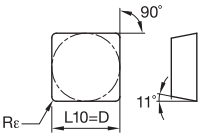




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RPGX060400MP	RPGV23MP	6,35	1/4	—	—	—	—															●									
RPGX090700MP	RPGV35MP	9,53	3/8	—	—	—	—															●									
RPGV120700MP	RPGV45MP	12,70	1/2	—	—	—	—															●			●						

SPG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPGN090304	SPG321	9,53	3/8	9,53	.375	0,4	1/64														●		●	●							
SPGN090308	SPG322	9,53	3/8	9,53	.375	0,8	1/32													●	●		●	●							
SPGN090312	SPG323	9,53	3/8	9,53	.375	1,2	3/64														●		●	●							
SPGN120304	SPG421	12,70	1/2	12,70	.500	0,4	1/64													●	●		●	●							
SPGN120308	SPG422	12,70	1/2	12,70	.500	0,8	1/32													●	●		●	●							
SPGN120312	SPG423	12,70	1/2	12,70	.500	1,2	3/64														●		●	●							
SPGN120316	SPG424	12,70	1/2	12,70	.500	1,6	1/16														●		●	●							
SPGN120412	SPG433	12,70	1/2	12,70	.500	1,2	3/64														●		●	●							
SPGN190408	SPG632	19,05	3/4	19,05	.750	0,8	1/32														●										
SPGN190412	SPG633	19,05	3/4	19,05	.750	1,2	3/64													●	●		●	●							
SPGN190416	SPG634	19,05	3/4	19,05	.750	1,6	1/16														●										


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

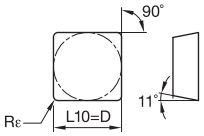

B32–B37

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

■ SPGR–K

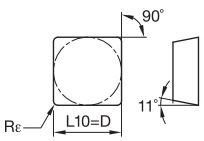




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPGR090308K	SPGF322	9,53	3/8	9,53	.375	0,8	1/32
SPGR120308K	SPGF422	12,70	1/2	12,70	.500	0,8	1/32

■ SPUN

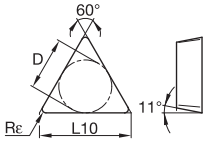




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPUN120304	SPU421	12,70	1/2	12,70	.500	0,4	1/64
SPUN120308	SPU422	12,70	1/2	12,70	.500	0,8	1/32
SPUN120312	SPU423	12,70	1/2	12,70	.500	1,2	3/64
SPUN190412	SPU633	19,05	3/4	19,05	.750	1,2	3/64

■ TPGN



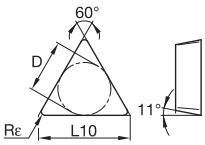


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGN060104	TPGE521	3,97	5/32	6,88	.271	0,4	1/64
TPGN110304	TPG221	6,35	1/4	11,00	.433	0,4	1/64
TPGN110308	TPG222	6,35	1/4	11,00	.433	0,8	1/32
TPGN160302	TPG3205	9,53	3/8	16,50	.650	0,2	.008
TPGN160304	TPG321	9,53	3/8	16,50	.650	0,4	1/64
TPGN160308	TPG322	9,53	3/8	16,50	.650	0,8	1/32
TPGN160312	TPG323	9,53	3/8	16,50	.650	1,2	3/64
TPGN160316	TPG324	9,53	3/8	16,50	.650	1,6	1/16
TPGN220404	TPG431	12,70	1/2	22,00	.866	0,4	1/64
TPGN220408	TPG432	12,70	1/2	22,00	.866	0,8	1/32
TPGN220412	TPG433	12,70	1/2	22,00	.866	1,2	3/64
TPGN220416	TPG434	12,70	1/2	22,00	.866	1,6	1/16
TPGN220432	TPG438	12,70	1/2	22,00	.866	3,2	1/8

● first choice
○ alternate choice

TPGR–K

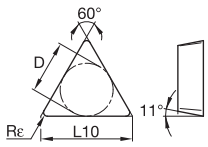




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGR110304K	TPGF221	6,35	1/4	11,00	.433	0,4	1/64
TPGR110308K	TPGF222	6,35	1/4	11,00	.433	0,8	1/32
TPGR160304K	TPGF321	9,53	3/8	16,50	.650	0,4	1/64
TPGR160308K	TPGF322	9,53	3/8	16,50	.650	0,8	1/32
TPGR220404K	TPGF431	12,70	1/2	22,00	.866	0,4	1/64
TPGR220408K	TPGF432	12,70	1/2	22,00	.866	0,8	1/32

TPUN





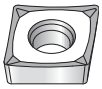
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPUN110304	TPU221	6,35	1/4	11,00	.433	0,4	1/64
TPUN110308	TPU222	6,35	1/4	11,00	.433	0,8	1/32
TPUN160304	TPU321	9,53	3/8	16,50	.650	0,4	1/64
TPUN160308	TPU322	9,53	3/8	16,50	.650	0,8	1/32
TPUN220408	TPU432	12,70	1/2	22,00	.866	0,8	1/32
TPUN220412	TPU433	12,70	1/2	22,00	.866	1,2	3/64

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								
TPGR110304K																●	●							
TPGR110308K																●	●							
TPGR160304K														●		●	●							
TPGR160308K																●	●							
TPGR220404K														●		●	●							
TPGR220408K																●	●							
TPUN110304														●										
TPUN110308														●										
TPUN160304														●										
TPUN160308														●										
TPUN220408														●										
TPUN220412														●										

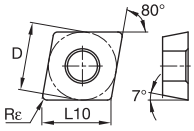
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

Inserts

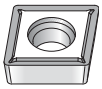
● first choice
○ alternate choice



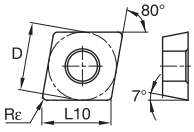
CCGT-HP



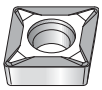
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCGT060202HP	CCGT21505HP	6,35	1/4	6,45	.254	0,2	.008													●			●	●		●	●		●		
CCGT060204HP	CCGT2151HP	6,35	1/4	6,45	.254	0,4	1/64													●			●	●		●	●		●		
CCGT060208HP	CCGT2152HP	6,35	1/4	6,45	.254	0,8	1/32																●	●		●	●		●		
CCGT09T302HP	CCGT32505HP	9,53	3/8	9,67	.381	0,2	.008													●			●	●		●	●		●		
CCGT09T304HP	CCGT3251HP	9,53	3/8	9,67	.381	0,4	1/64													●	●		●	●		●	●		●		
CCGT09T308HP	CCGT3252HP	9,53	3/8	9,67	.381	0,8	1/32																●	●		●	●		●		
CCGT09T316HP	CCGT3254HP	9,53	3/8	9,67	.381	1,6	1/16																	●							
CCGT120401HP	CCGT430HP	12,70	1/2	12,90	.508	0,1	.004																	●					●		
CCGT120402HP	CCGT4305HP	12,70	1/2	12,90	.508	0,2	.008																●	●		●	●		●		
CCGT120404HP	CCGT431HP	12,70	1/2	12,90	.508	0,4	1/64													●	●		●	●		●	●		●		
CCGT120408HP	CCGT432HP	12,70	1/2	12,90	.508	0,8	1/32													●	●		●	●		●	●		●		



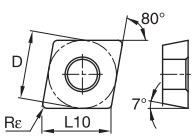
CCGT-LF



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCGT0602X0LF	CCGT215X0LF	6,35	1/4	6,45	.254	0,0	.0015																				●				
CCGT060201LF	CCGT2150LF	6,35	1/4	6,45	.254	0,1	.004													●			●	●			●		●		
CCGT060202LF	CCGT21505LF	6,35	1/4	6,45	.254	0,2	.008													●			●	●			●		●		
CCGT060204LF	CCGT2151LF	6,35	1/4	6,45	.254	0,4	1/64													●			●	●			●		●		
CCGT060208LF	CCGT2152LF	6,35	1/4	6,45	.254	0,8	1/32																●	●					●		
CCGT09T3X0LF	CCGT325X0LF	9,53	3/8	9,67	.381	0,0	.0015																				●				
CCGT09T301LF	CCGT3250LF	9,53	3/8	9,67	.381	0,1	.004													●			●	●			●		●		
CCGT09T302LF	CCGT32505LF	9,53	3/8	9,67	.381	0,2	.008																●	●			●		●		
CCGT09T304LF	CCGT3251LF	9,53	3/8	9,67	.381	0,4	1/64													●			●	●			●		●		
CCGT09T308LF	CCGT3252LF	9,53	3/8	9,67	.381	0,8	1/32													●			●	●			●		●		



CCMT-11



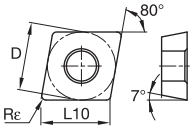
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT06020411	CCMT215111	6,35	1/4	6,45	.254	0,4	1/64																							●	
CCMT09T30411	CCMT325111	9,53	3/8	9,67	.381	0,4	1/64																							●	
CCMT09T30811	CCMT325211	9,53	3/8	9,67	.381	0,8	1/32																							●	
CCMT12040411	CCMT43111	12,70	1/2	12,90	.508	0,4	1/64																							●	
CCMT12040811	CCMT43211	12,70	1/2	12,90	.508	0,8	1/32																							●	

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

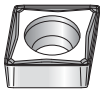
CCMT-FP

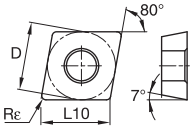




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCMT060202FP	CCMT21505FP	6,35	1/4	6,45	.254	0,2	.008
CCMT060204FP	CCMT2151FP	6,35	1/4	6,45	.254	0,4	1/64
CCMT060208FP	CCMT2152FP	6,35	1/4	6,45	.254	0,8	1/32
CCMT09T302FP	CCMT32505FP	9,53	3/8	9,67	.381	0,2	.008
CCMT09T304FP	CCMT3251FP	9,53	3/8	9,67	.381	0,4	1/64
CCMT09T308FP	CCMT3252FP	9,53	3/8	9,67	.381	0,8	1/32
CCMT120404FP	CCMT431FP	12,70	1/2	12,90	.508	0,4	1/64
CCMT120408FP	CCMT432FP	12,70	1/2	12,90	.508	0,8	1/32
CCMT120412FP	CCMT433FP	12,70	1/2	12,90	.508	1,2	3/64

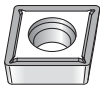
CCMT-FW

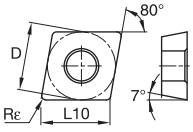




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCMT060202FW	CCMT21505FW	6,35	1/4	6,45	.254	0,2	.008
CCMT060204FW	CCMT2151FW	6,35	1/4	6,45	.254	0,4	1/64
CCMT060208FW	CCMT2152FW	6,35	1/4	6,45	.254	0,8	1/32
CCMT09T304FW	CCMT3251FW	9,53	3/8	9,67	.381	0,4	1/64
CCMT09T308FW	CCMT3252FW	9,53	3/8	9,67	.381	0,8	1/32

CCMT-LF





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCMT060202LF	CCMT21505LF	6,35	1/4	6,45	.254	0,2	.008
CCMT060204LF	CCMT2151LF	6,35	1/4	6,45	.254	0,4	1/64
CCMT060208LF	CCMT2152LF	6,35	1/4	6,45	.254	0,8	1/32
CCMT09T302LF	CCMT32505LF	9,53	3/8	9,67	.381	0,2	.008
CCMT09T304LF	CCMT3251LF	9,53	3/8	9,67	.381	0,4	1/64
CCMT09T308LF	CCMT3252LF	9,53	3/8	9,67	.381	0,8	1/32
CCMT120404LF	CCMT431LF	12,70	1/2	12,90	.508	0,4	1/64
CCMT120408LF	CCMT432LF	12,70	1/2	12,90	.508	0,8	1/32
CCMT120412LF	CCMT433LF	12,70	1/2	12,90	.508	1,2	3/64


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

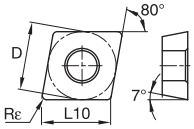

B32–B37

Inserts

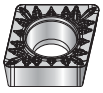
● first choice
○ alternate choice



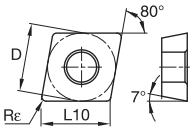
CCMT-MF



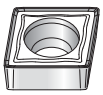
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204MF	CCMT2151MF	6,35	1/4	6,45	.254	0,4	1/64		●	●	●			●	●	●	●	●												
CCMT09T304MF	CCMT3251MF	9,53	3/8	9,67	.381	0,4	1/64		●	●	●			●	●	●	●	●												
CCMT09T308MF	CCMT3252MF	9,53	3/8	9,67	.381	0,8	1/32		●	●	●			●	●	●	●	●									●			
CCMT09T312MF	CCMT3253MF	9,53	3/8	9,67	.381	1,2	3/64		●	●				●	●		●													
CCMT120408MF	CCMT432MF	12,70	1/2	12,90	.508	0,8	1/32		●	●	●			●	●	●	●	●												
CCMT120412MF	CCMT433MF	12,70	1/2	12,90	.508	1,2	3/64		●	●				●	●	●	●										●			



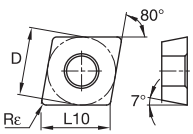
CCMT-MP



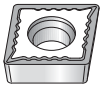
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204MP	CCMT2151MP	6,35	1/4	6,45	.254	0,4	1/64		●	●					●	●	●						●							
CCMT09T304MP	CCMT3251MP	9,53	3/8	9,67	.381	0,4	1/64		●	●					●	●	●						●							
CCMT09T308MP	CCMT3252MP	9,53	3/8	9,67	.381	0,8	1/32		●	●					●	●	●						●							
CCMT09T312MP	CCMT3253MP	9,53	3/8	9,67	.381	1,2	3/64			●							●													
CCMT120408MP	CCMT432MP	12,70	1/2	12,90	.508	0,8	1/32		●	●					●	●	●						●							
CCMT120412MP	CCMT433MP	12,70	1/2	12,90	.508	1,2	3/64			●					●	●	●													



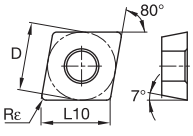
CCMT-MW



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT09T304MW	CCMT3251MW	9,53	3/8	9,67	.381	0,40	1/64			●					●								●	●					●	
CCMT09T308MW	CCMT3252MW	9,53	3/8	9,67	.381	0,80	1/32			●					●								●	●					●	
CCMT120404MW	CCMT431MW	12,70	1/2	12,90	.508	0,40	1/64			●					●								●	●					●	
CCMT120408MW	CCMT432MW	12,70	1/2	12,90	.508	0,80	1/32			●					●								●	●						

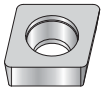


CCMT-UF

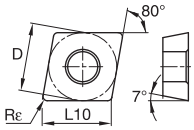


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMT060204UF	CCMT2151UF	6,35	1/4	6,45	.254	0,4	1/64	●	●	●														●						
CCMT09T302UF	CCMT32505UF	9,53	3/8	9,67	.381	0,2	.008	●	●															●						
CCMT09T304UF	CCMT3251UF	9,53	3/8	9,67	.381	0,4	1/64	●	●	●														●						
CCMT09T308UF	CCMT3252UF	9,53	3/8	9,67	.381	0,8	1/32	●	●	●														●						

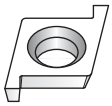
● first choice
○ alternate choice



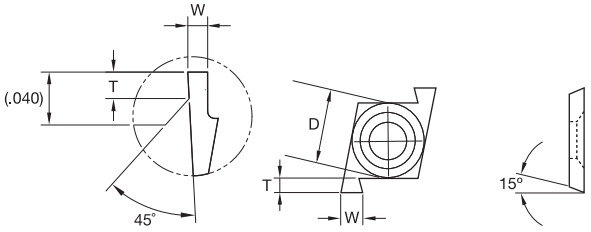
CCMW



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CCMW060204	CCMW2151	6,35	1/4	6,45	.254	0,4	1/64								●															
CCMW09T304	CCMW3251	9,53	3/8	9,67	.381	0,4	1/64								●															
CCMW09T308	CCMW3252	9,53	3/8	9,67	.381	0,8	1/32								●															
CCMW120408	CCMW432	12,70	1/2	12,90	.508	0,8	1/32								●															
CCMW120412	CCMW433	12,70	1/2	12,90	.508	1,2	3/64								●															



CDG

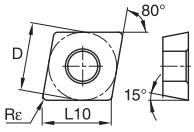


Detail of 0.015" (0,38mm) insert.

ISO catalog number	ANSI catalog number	D mm	D in	T mm	T in	W mm	W in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
	right hand																													
CDG127050R	CDG120202R	3,96	.156	0,64	.025	0,51	.020																	●						
CDG127064R	CDG120252R	3,96	.156	1,02	.040	0,64	.025																	●						
CDG127076R	CDG120302R	3,96	.156	1,02	.040	0,76	.030																●	●						
CDG127102R	CDG120402R	3,96	.156	1,02	.040	1,02	.040																●	●						



CDHB



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CDHBS4T0S0	CDHB120601	3,97	5/32	4,03	.159	0,1	.002																	●		●	●			●	
CDHBS4T0X0	CDHB1206X0	3,97	5/32	4,03	.159	0,1	.002																●								
CDHBS4T002	CDHB120605	3,97	5/32	4,03	.159	0,2	.007													●			●	●		●	●			●	
CDHBS4T004	CDHB12061	3,97	5/32	4,03	.159	0,4	.015													●			●	●		●	●			●	


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

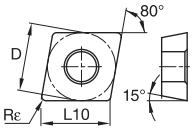

B32–B37

Inserts

● first choice
○ alternate choice

CDHH



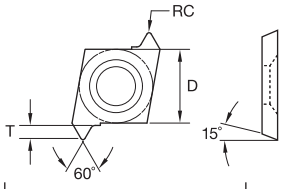


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
	right hand																													
CDHHS4T002R	CDHH120605R	3,97	5/32	4,03	.159	0,2	.007																●	●		●	●			●	
CDHHS4T004R	CDHH12061R	3,97	5/32	4,03	.159	0,4	.015																●	●		●	●				
	left hand																													
CDHHS4T002L	CDHH120605L	3,97	5/32	4,03	.159	0,2	.007																●	●		●	●			●	
CDHHS4T004L	CDHH12061L	3,97	5/32	4,03	.159	0,4	.015																●	●		●	●				

NOTE: Right-hand insert used left-hand bars. Left-hand insert used right-hand bars.

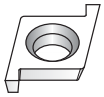
CDT

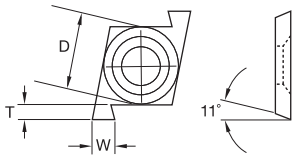




ISO catalog number	ANSI catalog number	D mm	D in	T mm	T in	RC mm	RC in
	right hand						
CDT127005R	CDT120022R	3,96	.156	0,64	.025	0,05	.002

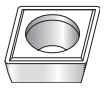
CPG

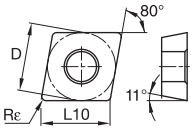




ISO catalog number	ANSI catalog number	D mm	D in	T mm	T in	W mm	W in
	right hand						
CPG190150R	CPG2062R	6,35	1/4	1,65	.065	1,52	.060
	left hand						
CPG190150L	CPG2062L	6,35	1/4	1,65	.065	1,52	.060

CPGH (T)

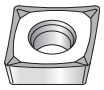


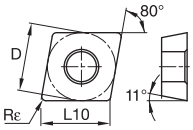


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060202K	CPGM21505	6,35	1/4	6,45	.254	0,2	.008													●	●									
CPGT060204K	CPGM2151	6,35	1/4	6,45	.254	0,4	1/64													●	●								●	
CPGT060208K	CPGM2152	6,35	1/4	6,45	.254	0,8	1/32													●	●									
CPGH09T301	CPGM3250	9,53	3/8	9,67	.381	0,1	.004																●	●		●	●			●	
CPGH09T302	CPGM32505	9,53	3/8	9,67	.381	0,2	.008													●	●		●	●		●	●			●	
CPGH09T304	CPGM3251	9,53	3/8	9,67	.381	0,4	1/64													●	●		●	●		●	●			●	
CPGH09T308	CPGM3252	9,53	3/8	9,67	.381	0,8	1/32													●	●		●	●		●	●		●	●	

● first choice
○ alternate choice

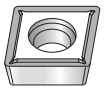
CPGT-HP

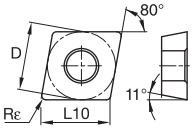




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060202HP	CPGT21505HP	6,35	1/4	6,45	.254	0,2	.008																●	●		●	●		●		
CPGT060204HP	CPGT2151HP	6,35	1/4	6,45	.254	0,4	1/64																●	●		●	●		●		
CPGT060208HP	CPGT2152HP	6,35	1/4	6,45	.254	0,8	1/32																●	●		●	●		●		
CPGT09T302HP	CPGT32505HP	9,53	3/8	9,67	.381	0,2	.008													●			●	●		●	●		●		
CPGT09T304HP	CPGT3251HP	9,53	3/8	9,67	.381	0,4	1/64													●			●	●		●	●		●		
CPGT09T308HP	CPGT3252HP	9,53	3/8	9,67	.381	0,8	1/32																●	●		●	●		●		

CPGT-LF

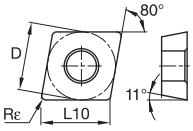




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPGT060201LF	CPGT2150LF	6,35	1/4	6,45	.254	0,1	.004													●			●	●			●		●		
CPGT060202LF	CPGT21505LF	6,35	1/4	6,45	.254	0,2	.008																●	●			●		●		
CPGT060204LF	CPGT2151LF	6,35	1/4	6,45	.254	0,4	1/64													●	●		●	●			●		●		
CPGT060208LF	CPGT2152LF	6,35	1/4	6,45	.254	0,8	1/32													●			●	●			●		●		
CPGT09T302LF	CPGT32505LF	9,53	3/8	9,67	.381	0,2	.008																●	●			●		●		
CPGT09T304LF	CPGT3251LF	9,53	3/8	9,67	.381	0,4	1/64													●			●	●			●		●		
CPGT09T308LF	CPGT3252LF	9,53	3/8	9,67	.381	0,8	1/32																●	●			●		●		

CPMT-FP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT050202FP	CPMT181505FP	5,56	7/32	5,65	.222	0,2	.008																●			●					
CPMT050204FP	CPMT18151FP	5,56	7/32	5,65	.222	0,4	1/64		●	●									●				●			●					
CPMT060202FP	CPMT21505FP	6,35	1/4	6,45	.254	0,2	.008		●	●							●						●			●					●
CPMT060204FP	CPMT2151FP	6,35	1/4	6,45	.254	0,4	1/64	●	●	●					●	●	●		●				●			●					●
CPMT060208FP	CPMT2152FP	6,35	1/4	6,45	.254	0,8	1/32		●	●					●	●	●						●			●					●
CPMT09T302FP	CPMT32505FP	9,53	3/8	9,67	.381	0,2	.008										●						●			●					●
CPMT09T304FP	CPMT3251FP	9,53	3/8	9,67	.381	0,4	1/64		●	●					●	●	●		●				●			●					●
CPMT09T308FP	CPMT3252FP	9,53	3/8	9,67	.381	0,8	1/32		●	●					●	●	●		●				●			●					●

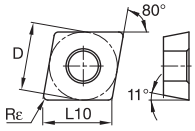
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

Inserts

● first choice
○ alternate choice

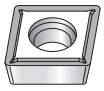
CPMT-FW

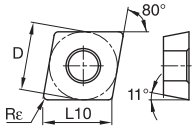




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060202FW	CPMT21505FW	6,35	1/4	6,45	.254	0,2	.008																●	●					●	
CPMT060204FW	CPMT2151FW	6,35	1/4	6,45	.254	0,4	1/64			●					●								●	●					●	
CPMT060208FW	CPMT2152FW	6,35	1/4	6,45	.254	0,8	1/32			●					●								●	●					●	
CPMT09T304FW	CPMT3251FW	9,53	3/8	9,67	.381	0,4	1/64			●					●								●	●					●	
CPMT09T308FW	CPMT3252FW	9,53	3/8	9,67	.381	0,8	1/32			●					●								●	●					●	

CPMT-LF

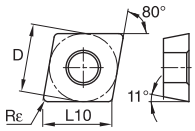




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT050202LF	CPMT181505LF	5,56	7/32	5,65	.222	0,2	.008																	●			●			
CPMT050204LF	CPMT18151LF	5,56	7/32	5,65	.222	0,4	1/64													●				●			●			●	
CPMT060202LF	CPMT21505LF	6,35	1/4	6,45	.254	0,2	.008													●				●			●			
CPMT060204LF	CPMT2151LF	6,35	1/4	6,45	.254	0,4	1/64	●	●	●	●		●	●	●	●	●			●	●			●			●			●	
CPMT060208LF	CPMT2152LF	6,35	1/4	6,45	.254	0,8	1/32	●	●	●	●		●	●	●	●	●			●				●			●			●	
CPMT09T302LF	CPMT32505LF	9,53	3/8	9,67	.381	0,2	.008													●				●			●			●	
CPMT09T304LF	CPMT3251LF	9,53	3/8	9,67	.381	0,4	1/64	●	●	●	●		●	●	●	●	●			●	●			●			●			●	
CPMT09T308LF	CPMT3252LF	9,53	3/8	9,67	.381	0,8	1/32	●	●	●	●		●	●	●	●	●			●	●			●			●			●	

CPMT-MF

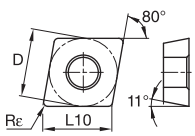




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060208MF	CPMT2152MF	6,35	1/4	6,45	.254	0,8	1/32		●	●				●	●	●	●													
CPMT09T308MF	CPMT3252MF	9,53	3/8	9,67	.381	0,8	1/32		●	●	●			●	●	●	●	●													
CPMT09T312MF	CPMT3253MF	9,53	3/8	9,67	.381	1,2	3/64		●	●					●	●	●														

CPMT-MP



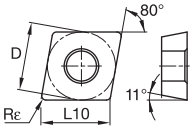


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060208MP	CPMT2152MP	6,35	1/4	6,45	.254	0,8	1/32		●	●													●							
CPMT09T308MP	CPMT3252MP	9,53	3/8	9,67	.381	0,8	1/32		●	●					●	●	●						●								
CPMT09T312MP	CPMT3253MP	9,53	3/8	9,67	.381	1,2	3/64									●														

● first choice
○ alternate choice

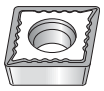
CPMT-MW

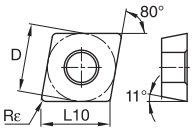




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT09T304MW	CPMT3251MW	9,53	3/8	9,67	.381	0,4	1/64			●					●								●	●						
CPMT09T308MW	CPMT3252MW	9,53	3/8	9,67	.381	0,8	1/32			●					●								●	●						●	

CPMT-UF

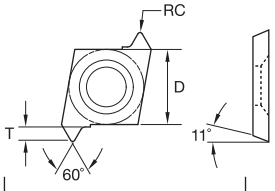




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CPMT060204UF	CPMT2151UF	6,35	1/4	6,45	.254	0,4	1/64	●	●	●														●						
CPMT09T304UF	CPMT3251UF	9,53	3/8	9,67	.381	0,4	1/64	●	●	●														●						

CPT

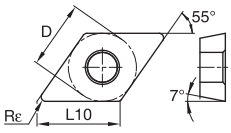




ISO catalog number	ANSI catalog number	D mm	D in	T mm	T in	RC mm	RC in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
	right hand																													
CPT190013R	CPT20052R	6,35	1/4	1,65	.065	0,13	.005																●	●						
	left hand																													
CPT190013L	CPT20052L	6,35	1/4	1,65	.065	0,13	.005																●	●						

DCGT-HP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DCGT070202HP	DCGT21505HP	6,35	1/4	7,75	.305	0,2	.008													●			●	●		●	●		●		
DCGT070204HP	DCGT2151HP	6,35	1/4	7,75	.305	0,4	1/64													●			●	●		●	●		●		
DCGT070208HP	DCGT2152HP	6,35	1/4	7,75	.305	0,8	1/32																●	●		●	●		●		
DCGT11T302HP	DCGT32505HP	9,53	3/8	11,63	.458	0,2	.008													●			●	●		●	●		●		
DCGT11T304HP	DCGT3251HP	9,53	3/8	11,63	.458	0,4	1/64													●	●		●	●		●	●		●		
DCGT11T308HP	DCGT3252HP	9,53	3/8	11,63	.458	0,8	1/32													●	●		●	●		●	●		●		


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

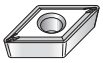

B24–B31

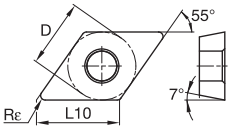

B32–B37

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●					●										●			●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																								●	
S													●	●	●	●	●	●	●	●	●	●			
H																									

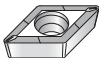
DCGT-LF

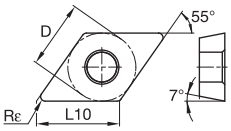




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCGT0702X0LF	DCGT215X0LF	6,35	1/4	7,75	.305	0,0	.0015
DCGT070201LF	DCGT2150LF	6,35	1/4	7,75	.305	0,1	.004
DCGT11T3X0LF	DCGT325X0LF	9,53	3/8	11,63	.458	0,0	.0015
DCGT11T301LF	DCGT3250LF	9,53	3/8	11,63	.458	0,1	.004
DCGT150408LF	DCGT432LF	12,70	1/2	15,50	.610	0,8	1/32

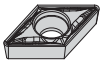
DCMT-11

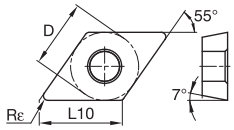




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT07020211	DCMT2150511	6,35	1/4	7,75	.305	0,2	.008
DCMT07020411	DCMT215111	6,35	1/4	7,75	.305	0,4	1/64
DCMT11T30411	DCMT325111	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T30811	DCMT325211	9,53	3/8	11,63	.458	0,8	1/32

DCMT-FP

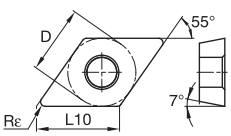




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT070202FP	DCMT21505FP	6,35	1/4	7,75	.305	0,2	.008
DCMT070204FP	DCMT2151FP	6,35	1/4	7,75	.305	0,4	1/64
DCMT070208FP	DCMT2152FP	6,35	1/4	7,75	.305	0,8	1/32
DCMT11T302FP	DCMT32505FP	9,53	3/8	11,63	.458	0,2	.008
DCMT11T304FP	DCMT3251FP	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308FP	DCMT3252FP	9,53	3/8	11,63	.458	0,8	1/32
DCMT11T312FP	DCMT3253FP	9,53	3/8	11,63	.458	1,2	3/64
DCMT150404FP	DCMT431FP	12,70	1/2	15,50	.610	0,4	1/64
DCMT150408FP	DCMT432FP	12,70	1/2	15,50	.610	0,8	1/32

DCMT-FW



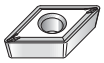


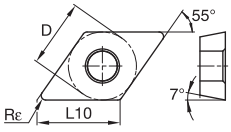
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT11T304FW	DCMT3251FW	9,53	3/8	11,63	.458	0,2	.007
DCMT11T308FW	DCMT3252FW	9,53	3/8	11,63	.458	0,8	1/32

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

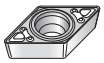
DCMT-LF

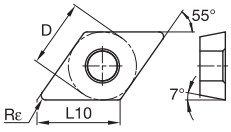




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT070202LF	DCMT21505LF	6,35	1/4	7,75	.305	0,2	.008
DCMT070204LF	DCMT2151LF	6,35	1/4	7,75	.305	0,4	1/64
DCMT11T302LF	DCMT32505LF	9,53	3/8	11,63	.458	0,2	.008
DCMT11T304LF	DCMT3251LF	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308LF	DCMT3252LF	9,53	3/8	11,63	.458	0,8	1/32
DCMT11T312LF	DCMT3253LF	9,53	3/8	11,63	.458	1,2	3/64
DCMT150404LF	DCMT431LF	12,70	1/2	15,50	.610	0,4	1/64
DCMT150408LF	DCMT432LF	12,70	1/2	15,50	.610	0,8	1/32

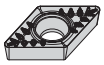
DCMT-MF

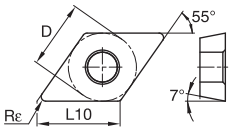




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT11T304MF	DCMT3251MF	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308MF	DCMT3252MF	9,53	3/8	11,63	.458	0,8	1/32
DCMT11T312MF	DCMT3253MF	9,53	3/8	11,63	.458	1,2	3/64

DCMT-MP

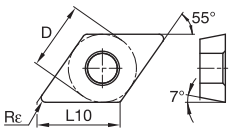




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT11T304MP	DCMT3251MP	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308MP	DCMT3252MP	9,53	3/8	11,63	.458	0,8	1/32
DCMT11T312MP	DCMT3253MP	9,53	3/8	11,63	.458	1,2	3/64

DCMT-MW





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT11T304MW	DCMT3251MW	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308MW	DCMT3252MW	9,53	3/8	11,63	.458	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

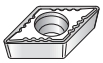

B24–B31

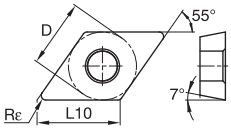

B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

DCMT-UF

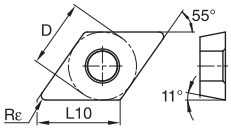




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCMT070204UF	DCMT2151UF	6,35	1/4	7,75	.305	0,4	1/64
DCMT11T302UF	DCMT32505UF	9,53	3/8	11,63	.458	0,2	.008
DCMT11T304UF	DCMT3251UF	9,53	3/8	11,63	.458	0,4	1/64
DCMT11T308UF	DCMT3252UF	9,53	3/8	11,63	.458	0,8	1/32

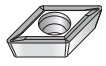
DPGT-HP

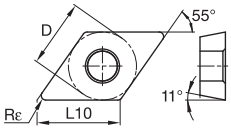




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGT070202HP	DPGT21505HP	6,35	1/4	7,75	.305	0,2	.008
DPGT070204HP	DPGT2151HP	6,35	1/4	7,75	.305	0,4	1/64
DPGT070208HP	DPGT2152HP	6,35	1/4	7,75	.305	0,8	1/32
DPGT11T304HP	DPGT3251HP	9,53	3/8	11,63	.458	0,4	1/64
DPGT11T308HP	DPGT3252HP	9,53	3/8	11,63	.458	0,8	1/32

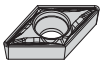
DPGT-LF

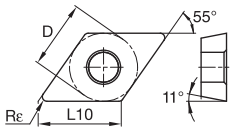




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGT070201LF	DPGT2150LF	6,35	1/4	7,75	.305	0,1	.004
DPGT070202LF	DPGT21505LF	6,35	1/4	7,75	.305	0,2	.008
DPGT070204LF	DPGT2151LF	6,35	1/4	7,75	.305	0,4	1/64
DPGT11T301LF	DPGT3250LF	9,53	3/8	11,63	.458	0,1	.004
DPGT11T302LF	DPGT32505LF	9,53	3/8	11,63	.458	0,2	.008
DPGT11T304LF	DPGT3251LF	9,53	3/8	11,63	.458	0,4	1/64
DPGT11T308LF	DPGT3252LF	9,53	3/8	11,63	.458	0,8	1/32

DPMT-FP



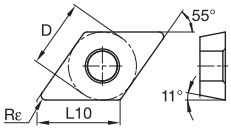


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPMT070202FP	DPMT21505FP	6,35	1/4	7,75	.305	0,2	.008
DPMT070204FP	DPMT2151FP	6,35	1/4	7,75	.305	0,4	1/64
DPMT070208FP	DPMT2152FP	6,35	1/4	7,75	.305	0,8	1/32
DPMT11T302FP	DPMT32505FP	9,53	3/8	11,63	.458	0,2	.008
DPMT11T304FP	DPMT3251FP	9,53	3/8	11,63	.458	0,4	1/64
DPMT11T308FP	DPMT3252FP	9,53	3/8	11,63	.458	0,8	1/32

● first choice
○ alternate choice

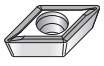
DPMT-FW

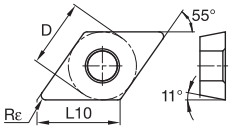




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT070204FW	DPMT2151FW	6,35	1/4	7,75	.305	0,4	1/64			●					●									●							
DPMT070208FW	DPMT2152FW	6,35	1/4	7,75	.305	0,8	1/32			●					●								●	●							
DPMT11T304FW	DPMT3251FW	9,53	3/8	11,63	.458	0,2	.007			●																					
DPMT11T308FW	DPMT3252FW	9,53	3/8	11,63	.458	0,8	1/32			●					●																

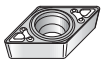
DPMT-LF

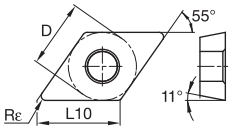




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT070202LF	DPMT21505LF	6,35	1/4	7,75	.305	0,2	.008																	●			●				
DPMT070204LF	DPMT2151LF	6,35	1/4	7,75	.305	0,4	1/64		●	●	●		●		●	●	●							●			●			●	
DPMT11T302LF	DPMT32505LF	9,53	3/8	11,63	.458	0,2	.008																	●			●			●	
DPMT11T304LF	DPMT3251LF	9,53	3/8	11,63	.458	0,4	1/64	●	●	●	●		●		●	●	●							●			●			●	
DPMT11T308LF	DPMT3252LF	9,53	3/8	11,63	.458	0,8	1/32	●	●	●	●		●		●	●	●							●			●				

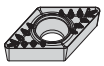
DPMT-MF

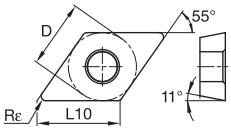




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT11T308MF	DPMT3252MF	9,53	3/8	11,63	.458	0,8	1/32		●	●				●	●	●	●	●													

DPMT-MP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
DPMT11T308MP	DPMT3252MP	9,53	3/8	11,63	.458	0,8	1/32			●					●								●							


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23


B24–B31

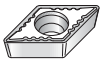

B32–B37

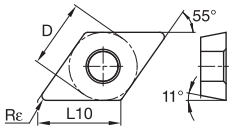
Inserts

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

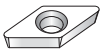
DPMT-UF

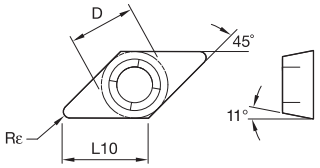




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPMT070204UF	DPMT2151UF	6,35	1/4	7,75	.305	0,4	1/64
DPMT11T304UF	DPMT3251UF	9,53	3/8	11,63	.458	0,4	1/64
DPMT11T308UF	DPMT3252UF	9,53	3/8	11,63	.458	0,8	1/32

GPCD

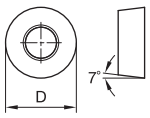




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
GPCD050102	GPCD505	3,97	5/32	5,61	.221	0,2	.007
GPCD050104	GPCD51	3,97	5/32	5,61	.221	0,4	.015

RCGH

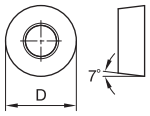




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCGH120400	RCGH43	12,70	1/2	–	–	–	–

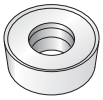
RCGH-MP

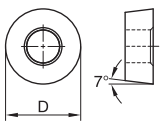




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCGH09T300MP	RCGH325MP	9,53	3/8	–	–	–	–
RCGH120400MP	RCGH43MP	12,70	1/2	–	–	–	–

RCGT-HP



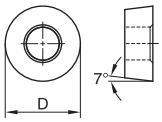


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCGT0803M0HP	RCGT0803M0HP	8,00	.315	–	–	–	–
RCGT10T3M0HP	RCGT10T3M0HP	10,00	.394	–	–	–	–
RCGT1204M0HP	RCGT1204M0HP	12,00	.472	–	–	–	–

● first choice
○ alternate choice

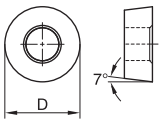
	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●											●	●		●	●			●	●
M								●	●	●						●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

RCGT-MS

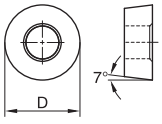
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCGT0803M0MS	RCGT0803M0MS	8,00	.315	–	–	–	–
RCGT1204M0MS	RCGT1204M0MS	12,00	.472	–	–	–	–
RCGT1606M0MS	RCGT1606M0MS	16,00	.630	–	–	–	–
RCGX1003M0MS	RCGX1003M0MS	10,00	.394	–	–	–	–

RCGT-RP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCGT0803M0RP	RCGT0803M0RP	8,00	.3150	–	–	–	–			●	●																			
RCGT1204M0RP	RCGT1204M0RP	12,00	.4724	–	–	–	–			●																				
RCGX1003M0RP	RCGX1003M0RP	10,00	.3937	–	–	–	–			●																				
RCMT1204M0RP	RCMT1204M0RP	12,00	.4724	–	–	–	–		●	●				●	●															
RCMT1606M0RP	RCMT1606M0RP	16,00	.6299	–	–	–	–		●	●				●																
RCMT2006M0RP	RCMT2006M0RP	20,00	.7874	–	–	–	–			●					●		●													
RCMX1003M0RP	RCMX1003M0RP	10,00	.3937	–	–	–	–		●	●	●																			
RCMX2507M0RP	RCMX2507M0RP	25,00	.9844	–	–	–	–			●	●																			
RCMX3209M0RP	RCMX3209M0RP	32,00	1.2598	–	–	–	–			●																				

RCMT

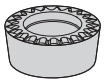
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
RCMT0602M0	RCMT0602M0	6,00	.236	–	–	–	–			●	●				●		●			●	●		●	●						
RCMT0803M0	RCMT0803M0	8,00	.315	–	–	–	–			●	●				●		●			●			●	●						
RCMT10T3M0	RCMT10T3M0	10,00	.394	–	–	–	–			●	●				●		●			●			●	●						
RCMT1204M0	RCMT1204M0	12,00	.472	–	–	–	–				●				●		●			●			●	●						
RCMT1605M0	RCMT1605M0	16,00	.630	–	–	–	–			●					●		●			●			●	●						
RCMT2006M0	RCMT2006M0	20,00	.787	–	–	–	–			●	●				●		●			●	●		●	●						
RCMT060200	RCMT215	6,35	1/4	–	–	–	–			●							●						●	●						
RCMT09T300	RCMT325	9,53	3/8	–	–	–	–			●					●		●			●			●	●				●		
RCMT120400	RCMT43	12,70	1/2	–	–	–	–								●		●													

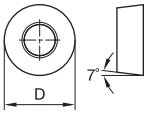
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●										●								●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

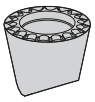
RCMT-MP

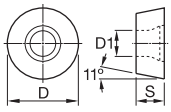




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCMT0602M0MP	RCMT0602M0MP	6,00	.236	–	–	–	–
RCMT0803M0MP	RCMT0803M0MP	8,00	.315	–	–	–	–
RCMT10T3M0MP	RCMT10T3M0MP	10,00	.394	–	–	–	–
RCMT1204M0MP	RCMT1204M0MP	12,00	.472	–	–	–	–
RCMT1606M0MP	RCMT1606M0MP	16,00	.630	–	–	–	–
RCMT060200MP	RCMT215MP	6,35	1/4	–	–	–	–
RCMT120400MP	RCMT43MP	12,70	1/2	–	–	–	–

RPGT-MP

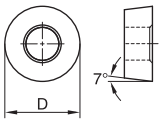




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RPGT060400MP	RPGT23MP	6,35	1/4	–	–	–	–
RPGT090700MP	RPGT35MP	9,53	3/8	–	–	–	–
RPGT120700MP	RPGT45MP	12,70	1/2	–	–	–	–

RCMT-RH

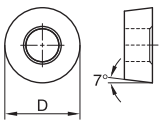




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCMT2006M0RH	RCMT2006M0RH	20,00	.7874	–	–	–	–
RCMX2507M0RH	RCMX2507M0RH	25,00	.9844	–	–	–	–
RCMX3209M0RH	RCMX3209M0RH	32,00	1.2598	–	–	–	–

RCMT-RM

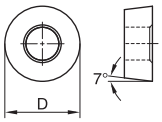




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCMT2006M0RM	RCMT2006M0RM	20,00	.787	–	–	–	–

RCMT-RP



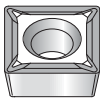


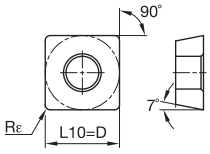
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RCGT0803M0RP	RCGT0803M0RP	8,00	.3150	–	–	–	–
RCMT1204M0RP	RCMT1204M0RP	12,00	.4724	–	–	–	–
RCMT1606M0RP	RCMT1606M0RP	16,00	.6299	–	–	–	–
RCMT2006M0RP	RCMT2006M0RP	20,00	.7874	–	–	–	–
RCMX1003M0RP	RCMX1003M0RP	10,00	.3937	–	–	–	–
RCMX2507M0RP	RCMX2507M0RP	25,00	.9844	–	–	–	–
RCMX3209M0RP	RCMX3209M0RP	32,00	1.2598	–	–	–	–

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●											●	●		●	●			●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

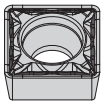
SCMT-11

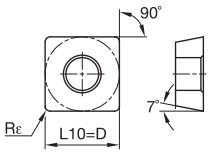




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T30411	SCMT325111	9,53	3/8	9,53	.375	0,4	1/64
SCMT09T30811	SCMT325211	9,53	3/8	9,53	.375	0,8	1/32
SCMT12040411	SCMT43111	12,70	1/2	12,70	.500	0,4	1/64
SCMT12040811	SCMT43211	12,70	1/2	12,70	.500	0,8	1/32

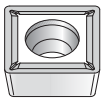
SCMT-FP

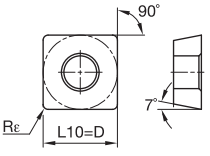




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T304FP	SCMT3251FP	9,53	3/8	9,53	.375	0,4	1/64
SCMT09T308FP	SCMT3252FP	9,53	3/8	9,53	.375	0,8	1/32
SCMT120404FP	SCMT431FP	12,70	1/2	12,70	.500	0,4	1/64
SCMT120408FP	SCMT432FP	12,70	1/2	12,70	.500	0,8	1/32
SCMT120412FP	SCMT433FP	12,70	1/2	12,70	.500	1,2	3/64

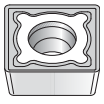
SCMT-LF

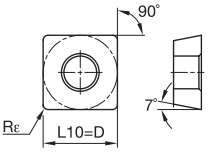




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T304LF	SCMT3251LF	9,53	3/8	9,53	.375	0,4	1/64
SCMT09T308LF	SCMT3252LF	9,53	3/8	9,53	.375	0,8	1/32
SCMT120404LF	SCMT431LF	12,70	1/2	12,70	.500	0,4	1/64
SCMT120408LF	SCMT432LF	12,70	1/2	12,70	.500	0,8	1/32
SCMT120412LF	SCMT433LF	12,70	1/2	12,70	.500	1,2	3/64

SCMT-MF





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T308MF	SCMT3252MF	9,53	3/8	9,53	.375	0,8	1/32
SCMT120408MF	SCMT432MF	12,70	1/2	12,70	.500	0,8	1/32
SCMT120412MF	SCMT433MF	12,70	1/2	12,70	.500	1,2	3/64


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

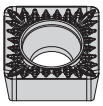

B24–B31

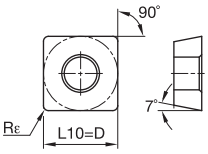

B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

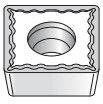
SCMT-MP

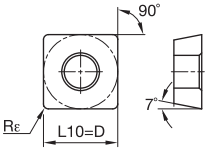




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T304MP	SCMT3251MP	9,53	3/8	9,53	.375	0,4	1/64
SCMT09T308MP	SCMT3252MP	9,53	3/8	9,53	.375	0,8	1/32
SCMT120404MP	SCMT431MP	12,70	1/2	12,70	.500	0,4	1/64
SCMT120408MP	SCMT432MP	12,70	1/2	12,70	.500	0,8	1/32
SCMT120412MP	SCMT433MP	12,70	1/2	12,70	.500	1,2	3/64

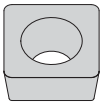
SCMT-UF

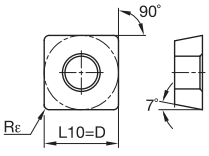




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMT09T308UF	SCMT3252UF	9,53	3/8	9,53	.375	0,8	1/32

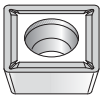
SCMW

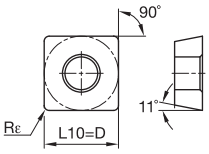




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SCMW09T304	SCMW3251	9,53	3/8	9,53	.375	0,4	1/64
SCMW09T308	SCMW3252	9,53	3/8	9,53	.375	0,8	1/32
SCMW120408	SCMW432	12,70	1/2	12,70	.500	0,8	1/32
SCMW120412	SCMW433	12,70	1/2	12,70	.500	1,2	3/64

SPGH



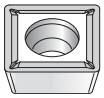


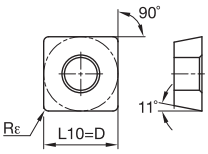
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPGH070208	SPGH25152	7,94	5/16	7,00	.276	0,8	1/32
SPGH090308	SPGH322	9,53	3/8	9,53	.375	0,8	1/32

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●											●	●		●	●			●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

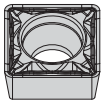
SPGT-LF

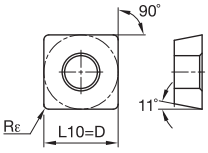




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPGT09T304LF	SPGT3251LF	9,53	3/8	9,53	.375	0,4	1/64
SPGT09T308LF	SPGT3252LF	9,53	3/8	9,53	.375	0,8	1/32

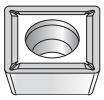
SPMT-FP

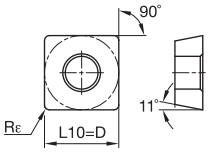




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPMT09T304FP	SPMT3251FP	9,53	3/8	9,53	.375	0,4	1/64
SPMT09T308FP	SPMT3252FP	9,53	3/8	9,53	.375	0,8	1/32

SPMT-LF

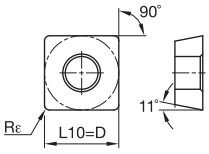




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPMT09T304LF	SPMT3251LF	9,53	3/8	9,53	.375	0,4	1/64
SPMT09T308LF	SPMT3252LF	9,53	3/8	9,53	.375	0,8	1/32

SPMT-MF





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPMT09T308MF	SPMT3252MF	9,53	3/8	9,53	.375	0,8	1/32
SPMT120408MF	SPMT432MF	12,70	1/2	12,70	.500	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

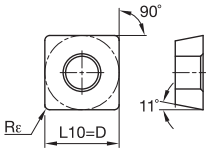

B32–B37

Inserts

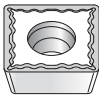
● first choice
○ alternate choice



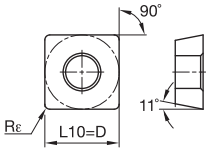
SPMT-MP



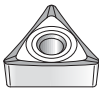
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P								●	●	●	●	●																		●	●
M																●	●	●					●	●		●	●				
K													●	●	●																●
N																													●		
S																			●	●	●	●	●	●	●	●	●	●			
H																															
SPMT09T308MP	SPMT3252MP	9,53	3/8	9,53	.375	0,8	1/32			●					●	●							●							
SPMT120408MP	SPMT432MP	12,70	1/2	12,70	.500	0,8	1/32			●					●								●							



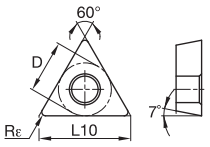
SPMT-UF



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
SPMT09T304UF	SPMT3251UF	9,53	3/8	9,53	.375	0,4	1/64		●															●						



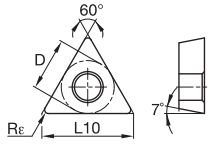
TCGT-HP



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCGT110202HP	TCGT21505HP	6,35	1/4	11,00	.433	0,2	.008																●	●		●	●		●		
TCGT110204HP	TCGT2151HP	6,35	1/4	11,00	.433	0,4	1/64													●			●	●		●	●		●		
TCGT110208HP	TCGT2152HP	6,35	1/4	11,00	.433	0,8	1/32																●	●		●	●		●		
TCGT16T302HP	TCGT32505HP	9,53	3/8	16,50	.650	0,2	.008																●	●		●	●				
TCGT16T304HP	TCGT3251HP	9,53	3/8	16,50	.650	0,4	1/64													●			●	●		●	●		●		
TCGT16T308HP	TCGT3252HP	9,53	3/8	16,50	.650	0,8	1/32													●			●	●		●	●		●		



TCGT-LF

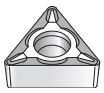


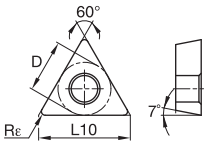
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TCGT1102X0LF	TCGT215X0LF	6,35	1/4	11,00	.433	0,0	.0015																				●				
TCGT110201LF	TCGT2150LF	6,35	1/4	11,00	.433	0,1	.004																●	●			●				
TCGT110204LF	TCGT2151LF	6,35	1/4	11,00	.433	0,4	1/64																●	●			●				
TCGT16T301LF	TCGT3250LF	9,53	3/8	16,50	.650	0,1	.004																	●			●				
TCGT16T302LF	TCGT32505LF	9,53	3/8	16,50	.650	0,2	.008																●	●							
TCGT16T304LF	TCGT3251LF	9,53	3/8	16,50	.650	0,4	1/64																●	●			●		●		
TCGT16T308LF	TCGT3252LF	9,53	3/8	16,50	.650	0,8	1/32																●	●							

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●											●	●		●	●			●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

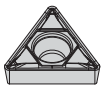
TCMT-11

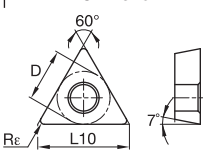




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT11020411	TCMT215111	6,35	1/4	11,00	.433	0,4	1/64
TCMT16T30411	TCMT325111	9,53	3/8	16,50	.650	0,4	1/64
TCMT16T30811	TCMT325211	9,53	3/8	16,50	.650	0,8	1/32

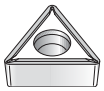
TCMT-FP

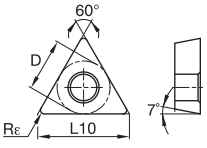




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT090204FP	TCMT18151FP	5,56	7/32	9,63	.379	0,4	1/64
TCMT090208FP	TCMT18152FP	5,56	7/32	9,63	.379	0,8	1/32
TCMT110202FP	TCMT21505FP	6,35	1/4	11,00	.433	0,2	.008
TCMT110204FP	TCMT2151FP	6,35	1/4	11,00	.433	0,4	1/64
TCMT110208FP	TCMT2152FP	6,35	1/4	11,00	.433	0,8	1/32
TCMT110304FP	TCMT221FP	6,35	1/4	11,00	.433	0,4	1/64
TCMT110308FP	TCMT222FP	6,35	1/4	11,00	.433	0,8	1/32
TCMT110312FP	TCMT223FP	6,35	1/4	11,00	.433	1,2	3/64
TCMT16T302FP	TCMT32505FP	9,53	3/8	16,50	.650	0,2	.008
TCMT16T304FP	TCMT3251FP	9,53	3/8	16,50	.650	0,4	1/64
TCMT16T308FP	TCMT3252FP	9,53	3/8	16,50	.650	0,8	1/32
TCMT16T312FP	TCMT3253FP	9,53	3/8	16,50	.650	1,2	3/64
TCMT220408FP	TCMT432FP	12,70	1/2	22,00	.866	0,8	1/32

TCMT-LF





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT110202LF	TCMT21505LF	6,35	1/4	11,00	.433	0,2	.008
TCMT110204LF	TCMT2151LF	6,35	1/4	11,00	.433	0,4	1/64
TCMT110208LF	TCMT2152LF	6,35	1/4	11,00	.433	0,8	1/32
TCMT16T302LF	TCMT32505LF	9,53	3/8	16,50	.650	0,2	.008
TCMT16T304LF	TCMT3251LF	9,53	3/8	16,50	.650	0,4	1/64
TCMT16T308LF	TCMT3252LF	9,53	3/8	16,50	.650	0,8	1/32
TCMT16T312LF	TCMT3253LF	9,53	3/8	16,50	.650	1,2	3/64
TCMT220408LF	TCMT432LF	12,70	1/2	22,00	.866	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

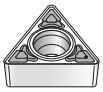

B24–B31

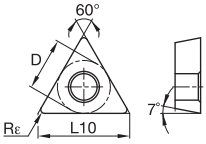

B32–B37

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

TCMT-MF

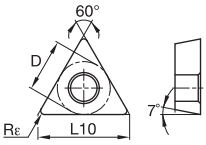




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT110208MF	TCMT2152MF	6,35	1/4	11,00	.433	0,8	1/32
TCMT16T308MF	TCMT3252MF	9,53	3/8	16,50	.650	0,8	1/32
TCMT16T312MF	TCMT3253MF	9,53	3/8	16,50	.650	1,2	3/64

TCMT-MP

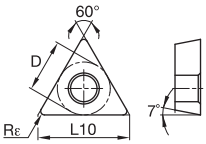




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT110208MP	TCMT2152MP	6,35	1/4	11,00	.433	0,8	1/32
TCMT16T304MP	TCMT3251MP	9,53	3/8	16,50	.650	0,4	1/64
TCMT16T308MP	TCMT3252MP	9,53	3/8	16,50	.650	0,8	1/32
TCMT16T312MP	TCMT3253MP	9,53	3/8	16,50	.650	1,2	3/64

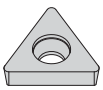
TCMT-UF

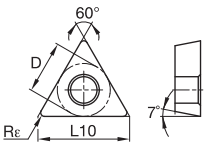




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMT110204UF	TCMT2151UF	6,35	1/4	11,00	.433	0,4	1/64
TCMT110208UF	TCMT2152UF	6,35	1/4	11,00	.433	0,8	1/32
TCMT16T308UF	TCMT3252UF	9,53	3/8	16,50	.650	0,8	1/32

TCMW



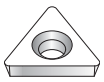


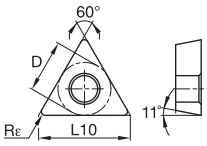
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCMW16T304	TCMW3251	9,53	3/8	16,50	.650	0,4	1/64
TCMW16T308	TCMW3252	9,53	3/8	16,50	.650	0,8	1/32

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●											●	●		●	●			●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

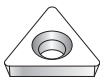
TPCB

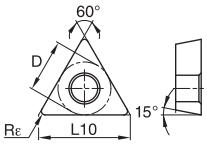




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPCB160302	TD6P05	9,53	3/8	16,50	.650	0,2	.007
TPCB160304	TD6P1	9,53	3/8	16,50	.650	0,4	1/64
TPCB160308	TD6P2	9,53	3/8	16,50	.650	0,8	.031
TD6P	TD6P	9,53	3/8	16,50	.650	0,8	1/32

TDHB

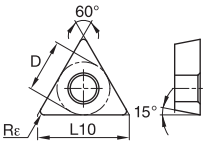




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TDHB07T12S0	TDHB12807501	4,06	.160	7,04	.277	0,1	.002
TDHB07T1202	TDHB12807505	4,06	.160	7,04	.277	0,2	.007
TDHB07T1204	TDHB1280751	4,06	.160	7,04	.277	0,4	1/64
TDHB07T1208	TDHB1280752	4,06	.160	7,04	.277	0,8	1/32

TDHH



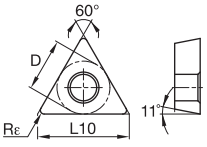


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
	right hand						
TDHH07T1202R	TDHH12807505R	4,06	.160	7,04	.277	0,2	.007
TDHH07T1204R	TDHH1280751R	4,06	.160	7,04	.277	0,4	1/64
	left hand						
TDHH07T1202L	TDHH12807505L	4,06	.160	7,04	.277	0,2	.007
TDHH07T1204L	TDHH1280751L	4,06	.160	7,04	.277	0,4	1/64

NOTE: Right-hand insert used left-hand bars. Left-hand insert used right-hand bars.

TPCG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPCG110202L	TPCG2205L	6,35	1/4	11,00	.433	0,2	.007
TPCG110204L	TPCG221L	6,35	1/4	11,00	.433	0,4	.15
TPCG110208L	TPCG222L	6,35	1/4	11,00	.433	0,8	.31


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

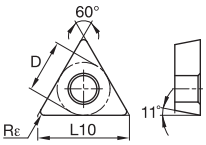

B32–B37

● first choice
○ alternate choice

	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P	●	●	●	●	●																		●	●
M									●	●	●					●	●		●	●				
K						●	●	●																●
N																						●		
S												●	●	●	●	●	●	●	●	●	●			
H																								

TPCH

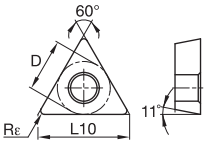




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPCH110202	TPCH2205	6,50	.256	11,26	.443	0,2	.007
TPCH110204	TPCH221	6,50	.256	11,26	.443	0,4	.015

TPGH

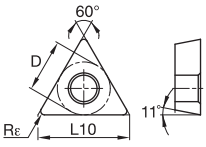




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGH160304	TPGH321	9,53	3/8	16,50	.650	0,4	1/64
TPGH160308	TPGH322	9,53	3/8	16,50	.650	0,8	1/32

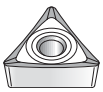
TPGM

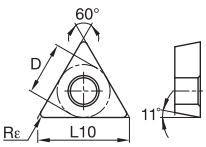




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGT110204K	TPGM2151	6,35	1/4	11,00	.433	0,4	1/64
TPGT110208K	TPGM2152	6,35	1/4	11,00	.433	0,8	1/32
TPGH16T304	TPGM3251	9,53	3/8	16,50	.650	0,4	1/64

TPGT-HP



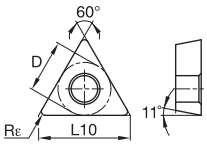


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGT110202HP	TPGT21505HP	6,35	1/4	11,00	.433	0,2	.008
TPGT110204HP	TPGT2151HP	6,35	1/4	11,00	.433	0,4	1/64
TPGT110208HP	TPGT2152HP	6,35	1/4	11,00	.433	0,8	1/32
TPGT16T302HP	TPGT32505HP	9,53	3/8	16,50	.650	0,2	.008
TPGT16T304HP	TPGT3251HP	9,53	3/8	16,50	.650	0,4	1/64
TPGT16T308HP	TPGT3252HP	9,53	3/8	16,50	.650	0,8	1/32

● first choice
○ alternate choice

TPGT-LF

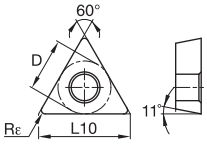




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPGT090202LF	TPGT181505LF	5,56	7/32	9,63	.379	0,2	.008																●	●			●		●		
TPGT090204LF	TPGT18151LF	5,56	7/32	9,63	.379	0,4	1/64																●	●			●		●		
TPGT110201LF	TPGT2150LF	6,35	1/4	11,00	.433	0,1	.004																●	●			●				
TPGT110202LF	TPGT21505LF	6,35	1/4	11,00	.433	0,2	.008																●	●			●		●		
TPGT110204LF	TPGT2151LF	6,35	1/4	11,00	.433	0,4	1/64																●	●			●		●		
TPGT110208LF	TPGT2152LF	6,35	1/4	11,00	.433	0,8	1/32																●	●			●		●		
TPGT16T304LF	TPGT3251LF	9,53	3/8	16,50	.650	0,4	1/64																●	●			●		●		
TPGT16T308LF	TPGT3252LF	9,53	3/8	16,50	.650	0,8	1/32																●	●			●		●		

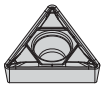
TPHB

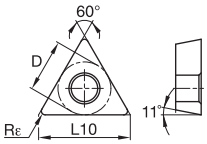




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPHB110202	TPHB21505	6,35	1/4	11,00	.433	0,2	.007
TPHB160304	TPHB321	9,53	3/8	16,50	.650	0,4	.015

TPMT-FP





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
TPMT090204FP	TPMT18151FP	5,56	7/32	9,63	.379	0,4	1/64																●								
TPMT090208FP	TPMT18152FP	5,56	7/32	9,63	.379	0,8	1/32		●	●						●	●		●				●				●				●
TPMT110202FP	TPMT21505FP	6,35	1/4	11,00	.433	0,2	.008																●				●				
TPMT110204FP	TPMT2151FP	6,35	1/4	11,00	.433	0,4	1/64		●	●					●	●	●		●				●				●				
TPMT110208FP	TPMT2152FP	6,35	1/4	11,00	.433	0,8	1/32		●	●					●	●	●						●								●
TPMT110304FP	TPMT221FP	6,35	1/4	11,00	.433	0,4	1/64																●				●				
TPMT110308FP	TPMT222FP	6,35	1/4	11,00	.433	0,8	1/32																●								
TPMT16T304FP	TPMT3251FP	9,53	3/8	16,50	.650	0,4	1/64		●	●					●		●						●				●				●
TPMT16T308FP	TPMT3252FP	9,53	3/8	16,50	.650	0,8	1/32	●	●	●					●		●						●				●				●
TPMT16T312FP	TPMT3253FP	9,53	3/8	16,50	.650	1,2	3/64																●								●
TPMT220408FP	TPMT432FP	12,70	1/2	22,00	.866	0,8	1/32			●													●								


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31


B32–B37

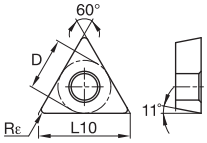
Inserts

● first choice
○ alternate choice

		KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
P		●	●	●	●	●																		●	●
M										●	●	●					●	●		●	●				
K							●	●	●																●
N																							●		
S													●	●	●	●	●	●	●	●	●	●			
H																									

TPMT-LF

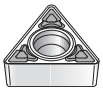


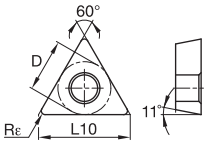


ISO catalog number	ANSI catalog number	D in	D mm	L10 mm	L10 in	Rε mm	Rε in
TPMT090202LF	TPMT181505LF	7/32	5,560	9,63	.379	0,2	.008
TPMT090204LF	TPMT18151LF	7/32	5,560	9,63	.379	0,4	1/64
TPMT110202LF	TPMT21505LF	1/4	6,350	11,00	.433	0,2	.008
TPMT110204LF	TPMT2151LF	1/4	6,350	11,00	.433	0,4	1/64
TPMT110208LF	TPMT2152LF	1/4	6,350	11,00	.433	0,8	1/32
TPMT16T304LF	TPMT3251LF	3/8	9,525	16,50	.650	0,4	1/64
TPMT16T308LF	TPMT3252LF	3/8	9,525	16,50	.650	0,8	1/32
TPMT16T312LF	TPMT3253LF	3/8	9,525	16,50	.650	1,2	3/64
TPMT220408LF	TPMT432LF	1/2	12,700	22,00	.866	0,8	1/32

TPMT090202LF	TPMT181505LF																	●			●			●	
TPMT090204LF	TPMT18151LF	●	●	●			●	●		●	●			●	●			●			●			●	
TPMT110202LF	TPMT21505LF																	●			●			●	
TPMT110204LF	TPMT2151LF	●	●	●			●	●	●	●	●			●	●			●			●			●	
TPMT110208LF	TPMT2152LF	●	●	●			●	●	●	●	●							●			●			●	
TPMT16T304LF	TPMT3251LF		●	●			●	●	●	●	●							●			●			●	
TPMT16T308LF	TPMT3252LF	●	●	●			●	●	●	●	●	●						●			●			●	
TPMT16T312LF	TPMT3253LF						●											●						●	
TPMT220408LF	TPMT432LF						●		●									●			●				

TPMT-MF



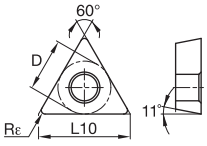


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPMT110208MF	TPMT2152MF	6,35	1/4	11,00	.433	0,8	1/32
TPMT16T308MF	TPMT3252MF	9,53	3/8	16,50	.650	0,8	1/32
TPMT16T312MF	TPMT3253MF	9,53	3/8	16,50	.650	1,2	3/64

TPMT110208MF	TPMT2152MF		●	●				●	●		●														
TPMT16T308MF	TPMT3252MF		●	●	●			●	●	●	●														
TPMT16T312MF	TPMT3253MF			●				●	●		●														

TPMT-MP



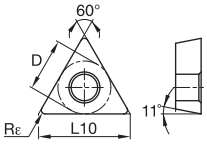


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPMT110208MP	TPMT2152MP	6,35	1/4	11,00	.433	0,8	1/32
TPMT16T308MP	TPMT3252MP	9,53	3/8	16,50	.650	0,8	1/32
TPMT16T312MP	TPMT3253MP	9,53	3/8	16,50	.650	1,2	3/64

TPMT110208MP	TPMT2152MP			●					●								●								
TPMT16T308MP	TPMT3252MP			●					●																
TPMT16T312MP	TPMT3253MP			●					●																

TPMT-UF

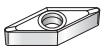




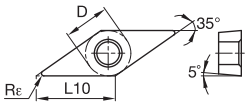
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPMT110202UF	TPMT21505UF	6,35	1/4	11,00	.433	0,2	.008
TPMT110204UF	TPMT2151UF	6,35	1/4	11,00	.433	0,4	1/64
TPMT16T304UF	TPMT3251UF	9,53	3/8	16,50	.650	0,4	1/64
TPMT16T308UF	TPMT3252UF	9,53	3/8	16,50	.650	0,8	1/32

TPMT110202UF	TPMT21505UF	●																●							
TPMT110204UF	TPMT2151UF	●	●															●							
TPMT16T304UF	TPMT3251UF		●															●							
TPMT16T308UF	TPMT3252UF		●															●							

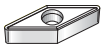
● first choice
○ alternate choice



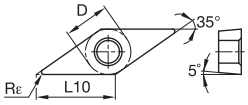
VBGT-HP



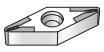
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBGT110302HP	VBGT2205HP	6,35	1/4	11,07	.436	0,2	.008																●	●		●	●		●		
VBGT110304HP	VBGT221HP	6,35	1/4	11,07	.436	0,4	1/64																●	●		●	●		●		
VBGT160404HP	VBGT331HP	9,53	3/8	16,61	.654	0,4	1/64													●	●		●	●		●	●		●		
VBGT160408HP	VBGT332HP	9,53	3/8	16,61	.654	0,8	1/32													●	●		●	●		●	●		●		



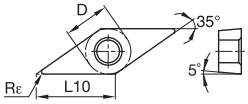
VBGT-LF



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBGT1103X0LF	VBGT22X0LF	6,35	1/4	11,07	.436	0,0	.0015																				●				
VBGT110301LF	VBGT220LF	6,35	1/4	11,07	.436	0,1	.004																	●	●		●		●		
VBGT110302LF	VBGT2205LF	6,35	1/4	11,07	.436	0,2	.008														●			●	●		●		●		
VBGT110304LF	VBGT221LF	6,35	1/4	11,07	.436	0,4	1/64													●				●	●		●		●		
VBGT1604X0LF	VBGT33X0LF	9,53	3/8	16,61	.654	0,0	.0015																				●				
VBGT160401LF	VBGT330LF	9,53	3/8	16,61	.654	0,1	.004																	●	●		●		●		
VBGT160402LF	VBGT3305LF	9,53	3/8	16,61	.654	0,2	.008													●				●	●		●		●		
VBGT160404LF	VBGT331LF	9,53	3/8	16,61	.654	0,4	1/64													●				●	●		●		●		



VBMT-11



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBMT11030211	VBMT220511	6,35	1/4	11,07	.436	0,2	.008																							●	
VBMT11030411	VBMT22111	6,35	1/4	11,07	.436	0,4	1/64																							●	
VBMT16040411	VBMT33111	9,53	3/8	16,61	.654	0,4	1/64																							●	
VBMT16040811	VBMT33211	9,53	3/8	16,61	.654	0,8	1/32																							●	


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

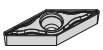

B24–B31

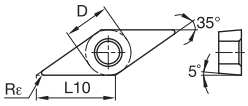

B32–B37

Inserts

● first choice
○ alternate choice

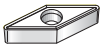
VBMT-FP

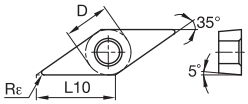




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBMT110302FP	VBMT2205FP	6,35	1/4	11,07	.436	0,2	.008			●													●							
VBMT110304FP	VBMT221FP	6,35	1/4	11,07	.436	0,4	1/64		●	●						●	●		●				●			●				●
VBMT110308FP	VBMT222FP	6,35	1/4	11,07	.436	0,8	1/32			●						●	●		●				●			●				
VBMT160402FP	VBMT3305FP	9,53	3/8	16,61	.654	0,2	.008			●							●		●				●			●				●
VBMT160404FP	VBMT331FP	9,53	3/8	16,61	.654	0,4	1/64	●	●	●					●	●	●		●				●			●				●
VBMT160408FP	VBMT332FP	9,53	3/8	16,61	.654	0,8	1/32	●	●	●					●	●	●		●				●			●				●
VBMT160412FP	VBMT333FP	9,53	3/8	16,61	.654	1,2	3/64			●																				

VBMT-LF

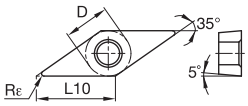




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBMT110302LF	VBMT2205LF	6,35	1/4	11,07	.436	0,2	.008													●				●						●	
VBMT110304LF	VBMT221LF	6,35	1/4	11,07	.436	0,4	1/64	●	●	●	●		●		●	●	●			●				●			●			●	
VBMT110308LF	VBMT222LF	6,35	1/4	11,07	.436	0,8	1/32	●	●	●	●		●		●		●			●				●			●			●	
VBMT160402LF	VBMT3305LF	9,53	3/8	16,61	.654	0,2	.008													●	●			●			●			●	
VBMT160404LF	VBMT331LF	9,53	3/8	16,61	.654	0,4	1/64	●	●	●	●		●	●	●	●	●	●		●	●			●			●			●	
VBMT160408LF	VBMT332LF	9,53	3/8	16,61	.654	0,8	1/32	●	●	●	●		●	●	●	●	●	●		●	●			●			●			●	
VBMT160412LF	VBMT333LF	9,53	3/8	16,61	.654	1,2	3/64						●		●																

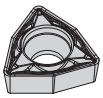
VBMT-MP

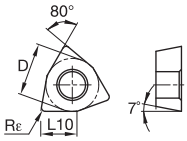




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
VBMT160404MP	VBMT331MP	9,53	3/8	16,61	.654	0,4	1/64			●					●		●													
VBMT160408MP	VBMT332MP	9,53	3/8	16,61	.654	0,8	1/32			●					●		●													

WCMT-FP

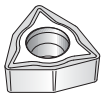


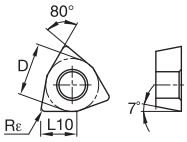


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WCMT040204FP	WCMT2151FP	6,35	1/4	4,34	.171	0,4	1/64																●			●				
WCMT06T308FP	WCMT3252FP	9,53	3/8	6,52	.257	0,8	1/32			●													●							

● first choice
○ alternate choice

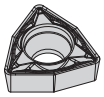
WCMT-LF

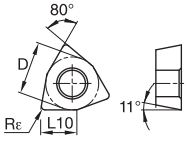




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WCMT040204LF	WCMT2151LF	6,35	1/4	4,34	.171	0,4	1/64																	●			●				
WCMT06T308LF	WCMT3252LF	9,53	3/8	6,52	.257	0,8	1/32																	●			●			●	

WPMT-FP

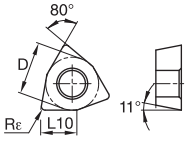




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPMTS3T104FP	WPMT15121FP	4,76	3/16	3,25	.128	0,4	1/64			●													●								
WPMT040204FP	WPMT2151FP	6,35	1/4	4,34	.171	0,4	1/64			●							●						●								
WPMT06T304FP	WPMT3251FP	9,53	3/8	6,52	.257	0,4	1/64		●							●	●						●								
WPMT06T308FP	WPMT3252FP	9,53	3/8	6,52	.257	0,8	1/32		●	●							●						●								

WPGT-UF

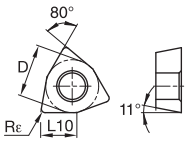




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPGTS30101UF	WPGT1510UF	4,76	3/16	3,26	.128	0,1	.004																●	●							
WPGTS30102UF	WPGT15105UF	4,76	3/16	3,26	.128	0,2	.008																●	●							
WPGT040202UF	WPGT21505UF	6,35	1/4	4,34	.171	0,2	.008																●								

WPMT-LF





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
WPMTS3T104LF	WPMT15121LF	4,76	3/16	3,25	.128	0,4	1/64																	●			●				
WPMT040204LF	WPMT2151LF	6,35	1/4	4,34	.171	0,4	1/64		●				●		●									●			●				
WPMT06T304LF	WPMT3251LF	9,53	3/8	6,52	.257	0,4	1/64		●	●					●	●	●							●							
WPMT06T308LF	WPMT3252LF	9,53	3/8	6,52	.257	0,8	1/32		●	●			●		●	●	●							●			●				

C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37



Ceramic Inserts

Primary Application

Kennametal's advanced materials, utilizing Beyond™ technology, offer greater wear resistance and toughness, depending on the job.

KYK ceramic inserts are the first choice for high speed, continuous, and lightly interrupted turning applications in cast iron materials. Benefits include improved fracture toughness, better wear resistance, and extended application range. Combining KYK10™ and CVD-coated KYK25™ with our other ceramic grades for cast iron, Kennametal provides a complete, high-performance ceramic portfolio that can reduce machining cycle times and lower manufacturing costs.

KYS ceramic inserts are the first choice for high-speed applications in high-temp alloys. The multilayer coating offers enhanced chemical wear resistance versus uncoated grades. A superior sialon ceramic substrate provides excellent depth of cut notching resistance versus whisker-reinforced ceramics.

Features and Benefits

KYK10

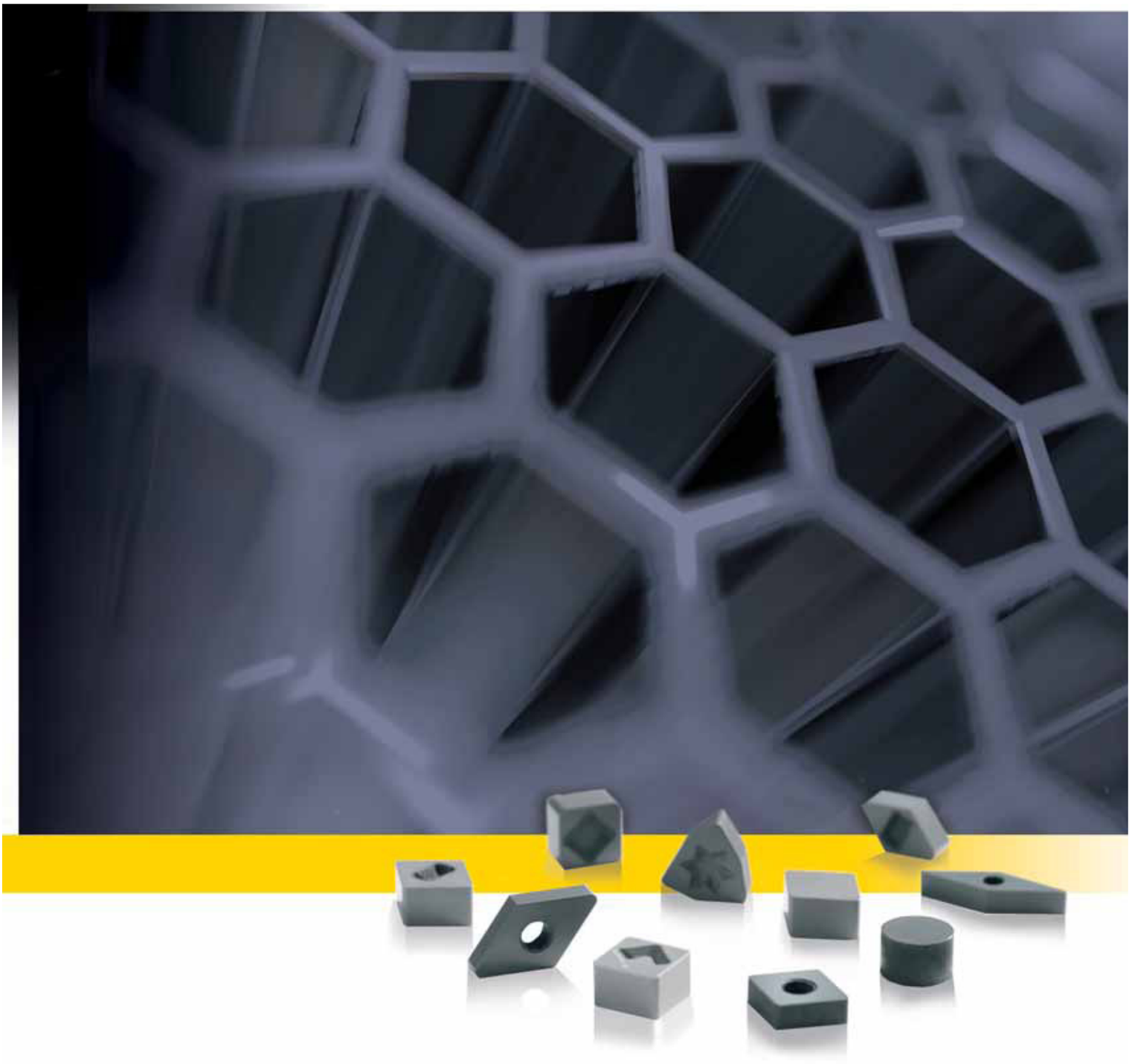
- Improved wear resistance and toughness with 20% longer tool life than current KY1310™.
- Best suited for continuous turning of cast iron materials and in lightly interrupted cuts.
- Available in Kenloc,™ Kendex,™ and Top Notch™ turning insert styles.

KYK25

- 12 micron thick coating provides excellent wear resistance and pre-coat treatment allows for very consistent tool life and performance in cast iron applications.
- Up to 30% longer tool life vs. competitors' CVD-coated ceramic grades.
- Available in Kenloc, Kendex, and Top Notch turning insert styles.

KY3500™

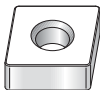
- The industry standard for high-speed turning.
- Excellent for roughing to finishing operations in wet or dry cuts with speeds up to 3,400 SFM.
- Performs well in difficult interrupted cuts in ductile or malleable cast iron (<70 KSI tensile strength) at speeds of 900–1,600 SFM.

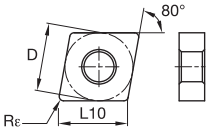


● first choice
○ alternate choice

P														
M														
K										●	●	●		
N														
S		●	●	●										
H		○		●										●

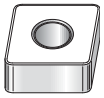
CNGA

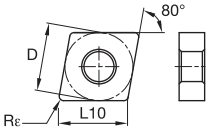




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGA120404E	CNGA431	12,70	1/2	12,90	.508	0,4	1/64							●
CNGA120408E	CNGA432E	12,70	1/2	12,90	.508	0,8	1/32	●	●					
CNGA120408T01020	CNGA432T0420	12,70	1/2	12,90	.508	0,8	1/32	●	●	●				
CNGA120408T02020	CNGA432T0820	12,70	1/2	12,90	.508	0,8	1/32				●	●	●	
CNGA120412E	CNGA433	12,70	1/2	12,90	.508	1,2	3/64							●
CNGA120412E	CNGA433E	12,70	1/2	12,90	.508	1,2	3/64	●	●					
CNGA120412T01020	CNGA433T0420	12,70	1/2	12,90	.508	1,2	3/64	●	●					●
CNGA120412T02020	CNGA433T0820	12,70	1/2	12,90	.508	1,2	3/64				●	●	●	
CNGA120416E	CNGA434E	12,70	1/2	12,90	.508	1,6	1/16	●	●					
CNGA120416T01020	CNGA434T0420	12,70	1/2	12,90	.508	1,6	1/16							●
CNGA120416T02020	CNGA434T0820	12,70	1/2	12,90	.508	1,6	1/16				●	●	●	
CNGA160612T01020	CNGA543T0420	15,88	5/8	16,12	.635	1,2	3/64							●
CNGA160612T02020	CNGA543T0820	15,88	5/8	16,12	.635	1,2	3/64					●	●	
CNGA160616T02020	CNGA544T0820	15,88	5/8	16,12	.635	1,6	1/16					●	●	
CNGA190612T01020	CNGA643T0420	19,05	3/4	19,34	.762	1,2	3/64	●	●					
CNGA190612T02020	CNGA643T0820	19,05	3/4	19,34	.762	1,2	3/64			●		●	●	
CNGA190616T01020	CNGA644T0420	19,05	3/4	19,34	.762	1,6	1/16							●
CNGA190616T02020	CNGA644T0820	19,05	3/4	19,34	.762	1,6	1/16					●	●	

CNGA-FW



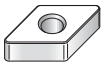


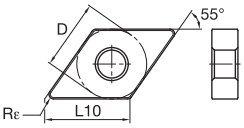
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGA120404EFW	CNGA431FW	12,70	1/2	12,90	.508	0,4	1/64
CNGA120408EFW	CNGA432FW	12,70	1/2	12,90	.508	0,8	1/32
CNGA120408T01020FW	CNGA432T0420FW	12,70	1/2	12,90	.508	0,8	1/32
CNGA120412EFW	CNGA433FW	12,70	1/2	12,90	.508	1,2	3/64
CNGA120412T01020FW	CNGA433T0420FW	12,70	1/2	12,90	.508	1,2	3/64
CNGA120412T02020FW	CNGA433T0820FW	12,70	1/2	12,90	.508	1,2	3/64
CNGA120416T01020FW	CNGA434T0420FW	12,70	1/2	12,90	.508	1,6	1/16

● first choice
○ alternate choice

P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

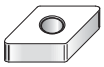
■ DNGA

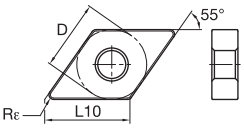




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGA150404E	DNGA431	12,70	1/2	15,50	.610	0,4	1/64							●
DNGA150404T01020	DNGA431T0420	12,70	1/2	15,50	.610	0,4	1/64							●
DNGA150408E	DNGA432	12,70	1/2	15,50	.610	0,8	1/32							●
DNGA150408T01020	DNGA432T0420	12,70	1/2	15,50	.610	0,8	1/32	●	●	●				●
DNGA150408T02020	DNGA432T0820	12,70	1/2	15,50	.610	0,8	1/32				●	●	●	
DNGA150412T01020	DNGA433T0420	12,70	1/2	15,50	.610	1,2	3/64	●	●					●
DNGA150412T02020	DNGA433T0820	12,70	1/2	15,50	.610	1,2	3/64				●	●	●	
DNGA150416T01020	DNGA434T0420	12,70	1/2	15,50	.610	1,6	1/16							●
DNGA150416T02020	DNGA434T0820	12,70	1/2	15,50	.610	1,6	1/16				●	●	●	
DNGA150424T01020	DNGA436T0420	12,70	1/2	15,50	.610	2,4	3/32			●				
DNGA150608T01020	DNGA442T0420	12,70	1/2	15,50	.610	0,8	1/32							●
DNGA150608T02020	DNGA442T0820	12,70	1/2	15,50	.610	0,8	1/32						●	
DNGA150612T01020	DNGA443T0420	12,70	1/2	15,50	.610	1,2	3/64							●
DNGA150612T02020	DNGA443T0820	12,70	1/2	15,50	.610	1,2	3/64						●	
DNGA150616T01020	DNGA444T0420	12,70	1/2	15,50	.610	1,6	1/16							●
DNGA150616T02020	DNGA444T0820	12,70	1/2	15,50	.610	1,6	1/16						●	

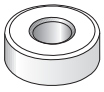
■ DNGA-FW

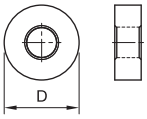




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
DNGA150408EFW	DNGA432FW	12,70	1/2	15,50	.610	0,8	1/32							●
DNGA150412EFW	DNGA433FW	12,70	1/2	15,50	.610	1,2	3/64							●

■ RNGA





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RNGA120400T01525	RNGA43T0625	12,70	1/2	–	–	–	–							●


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

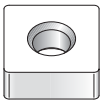

B24–B31

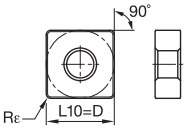

B32–B37

● first choice
○ alternate choice

		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

■ SNGA

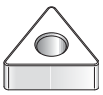


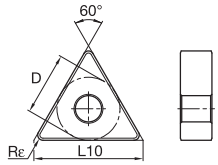


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNGA120408T01020	SNGA432T0420	12,70	1/2	12,70	.500	0,8	1/32
SNGA120408T02020	SNGA432T0820	12,70	1/2	12,70	.500	0,8	1/32
SNGA120412T01020	SNGA433T0420	12,70	1/2	12,70	.500	1,2	3/64
SNGA120412T02020	SNGA433T0820	12,70	1/2	12,70	.500	1,2	3/64
SNGA120416T01020	SNGA434T0420	12,70	1/2	12,70	.500	1,6	1/16
SNGA120416T02020	SNGA434T0820	12,70	1/2	12,70	.500	1,6	1/16
SNGA150612T02020	SNGA543T	15,88	5/8	15,88	.625	1,2	3/64
SNGA150612T02020	SNGA543T0820	15,88	5/8	15,88	.625	1,2	3/64
SNGA150616T02020	SNGA544T	15,88	5/8	15,88	.625	1,6	1/16
SNGA190612T02020	SNGA643T0820	19,05	3/4	19,05	.750	1,2	3/64
SNGA190616T02020	SNGA644T0820	19,05	3/4	19,05	.750	1,6	1/16

ISO catalog number	ANSI catalog number	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGA120408T01020	SNGA432T0420							●
SNGA120408T02020	SNGA432T0820				●	●	●	
SNGA120412T01020	SNGA433T0420	●	●					●
SNGA120412T02020	SNGA433T0820				●	●	●	
SNGA120416T01020	SNGA434T0420							●
SNGA120416T02020	SNGA434T0820					●	●	
SNGA150612T02020	SNGA543T						●	
SNGA150612T02020	SNGA543T0820					●		
SNGA150616T02020	SNGA544T						●	
SNGA190612T02020	SNGA643T0820						●	
SNGA190616T02020	SNGA644T0820						●	

■ TNGA

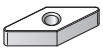


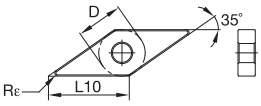


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGA160404E	TNGA331	9,53	3/8	16,50	.650	0,4	1/64
TNGA160404T01020	TNGA331T0420	9,53	3/8	16,50	.650	0,4	1/64
TNGA160408E	TNGA332	9,53	3/8	16,50	.650	0,8	1/32
TNGA160408T01020	TNGA332T0420	9,53	3/8	16,50	.650	0,8	1/32
TNGA160408T02020	TNGA332T0820	9,53	3/8	16,50	.650	0,8	1/32
TNGA160412T01020	TNGA333T0420	9,53	3/8	16,50	.650	1,2	3/64
TNGA160412T02020	TNGA333T0820	9,53	3/8	16,50	.650	1,2	3/64
TNGA160416T02020	TNGA334T0820	9,53	3/8	16,50	.650	1,6	1/16
TNGA220408T01020	TNGA432T0420	12,70	1/2	22,00	.866	0,8	1/32
TNGA220412T01020	TNGA433T0420	12,70	1/2	22,00	.866	1,2	3/64
TNGA220412T02020	TNGA433T0820	12,70	1/2	22,00	.866	1,2	3/64
TNGA220416T02020	TNGA434T	12,70	1/2	22,00	.866	1,6	1/16

ISO catalog number	ANSI catalog number	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
TNGA160404E	TNGA331							●
TNGA160404T01020	TNGA331T0420							●
TNGA160408E	TNGA332							●
TNGA160408T01020	TNGA332T0420							●
TNGA160408T02020	TNGA332T0820				●		●	
TNGA160412T01020	TNGA333T0420							●
TNGA160412T02020	TNGA333T0820						●	
TNGA160416T02020	TNGA334T0820					●	●	
TNGA220408T01020	TNGA432T0420							●
TNGA220412T01020	TNGA433T0420							●
TNGA220412T02020	TNGA433T0820					●		
TNGA220416T02020	TNGA434T						●	

■ VNGA





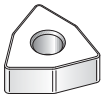
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNGA160404T01020	VNGA331T0420	9,53	3/8	16,61	.654	0,4	1/64
VNGA160408T01020	VNGA332T0420	9,53	3/8	16,61	.654	0,8	1/32
VNGA160408T02020	VNGA332T0820	9,53	3/8	16,61	.654	0,8	1/32
VNGA220408T02020	VNGA432T0820	12,70	1/2	22,14	.872	0,8	1/32

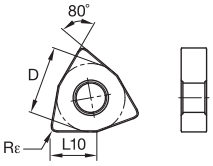
ISO catalog number	ANSI catalog number	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
VNGA160404T01020	VNGA331T0420							●
VNGA160408T01020	VNGA332T0420							●
VNGA160408T02020	VNGA332T0820						●	
VNGA220408T02020	VNGA432T0820					●		

● first choice
○ alternate choice

	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

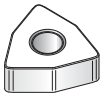
WNGA

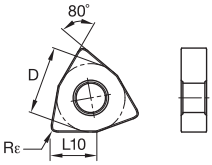




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
WNGA080404T01020	WNGA431T0420	12,70	1/2	8,69	.342	0,4	1/64							●
WNGA080408EFW	WNGA432FW	12,70	1/2	8,69	.342	0,8	1/32							●
WNGA080408T01020	WNGA432T0420	12,70	1/2	8,69	.342	0,8	1/32		●					●
WNGA080408T01020FW	WNGA432T0420FW	12,70	1/2	8,69	.342	0,8	1/32						●	
WNGA080408T02020	WNGA432T0820	12,70	1/2	8,69	.342	0,8	1/32					●	●	
WNGA080412EFW	WNGA433FW	12,70	1/2	8,69	.342	1,2	3/64							●
WNGA080412T01020	WNGA433T0420	12,70	1/2	8,69	.342	1,2	3/64							●
WNGA080412T01020FW	WNGA433T0420FW	12,70	1/2	8,69	.342	1,2	3/64						●	
WNGA080412T02020	WNGA433T0820	12,70	1/2	8,69	.342	1,2	3/64				●	●	●	
WNGA080416T01020	WNGA434T0420	12,70	1/2	8,69	.342	1,6	1/16		●					
WNGA080416T02020	WNGA434T0820	12,70	1/2	8,69	.342	1,6	1/16					●	●	

WNGA-FW





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
WNGA080408EFW	WNGA432FW	12,70	1/2	8,69	.342	0,8	1/32							●
WNGA080408T01020FW	WNGA432T0420FW	12,70	1/2	8,69	.342	0,8	1/32						●	
WNGA080412EFW	WNGA433FW	12,70	1/2	8,69	.342	1,2	3/64							●
WNGA080412T01020FW	WNGA433T0420FW	12,70	1/2	8,69	.342	1,2	3/64						●	


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

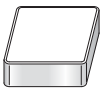

B24–B31

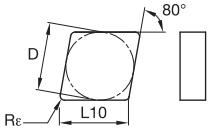

B32–B37

● first choice
○ alternate choice

P							
M							
K				●	●	●	
N							
S	●	●	●				
H	○		●				●

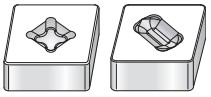
CNG

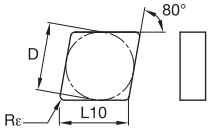




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGN120404T01020	CNG431T0420	12,70	1/2	12,90	.508	0,4	1/64							●
CNGN120408T01020	CNG432T0420	12,70	1/2	12,90	.508	0,8	1/32	●	●	●				●
CNGN120408T02020	CNG432T0820	12,70	1/2	12,90	.508	0,8	1/32				●		●	
CNGN120412E	CNG433E	12,70	1/2	12,90	.508	1,2	3/64	●	●					
CNGN120412T01020	CNG433T0420	12,70	1/2	12,90	.508	1,2	3/64	●	●	●				●
CNGN120412T02020	CNG433T0820	12,70	1/2	12,90	.508	1,2	3/64				●	●	●	
CNGN120416E	CNG434E	12,70	1/2	12,90	.508	1,6	1/16	●	●					
CNGN120416T01020	CNG434T0420	12,70	1/2	12,90	.508	1,6	1/16	●	●	●				
CNGN120416T02020	CNG434T0820	12,70	1/2	12,90	.508	1,6	1/16						●	
CNGN120708T01020	CNG452T0420	12,70	1/2	12,90	.508	0,8	1/32			●				●
CNGN120712T01020	CNG453T0420	12,70	1/2	12,90	.508	1,2	3/64	●	●	●				●
CNGN120712T02020	CNG453T0820	12,70	1/2	12,90	.508	1,2	3/64					●	●	
CNGN120716T01020	CNG454T0420	12,70	1/2	12,90	.508	1,6	1/16	●	●	●				●
CNGN120716T02020	CNG454T0820	12,70	1/2	12,90	.508	1,6	1/16				●		●	
CNGN160412T02020	CNG533T0820	15,88	5/8	16,12	.635	1,2	3/64						●	
CNGN160716T02020	CNG554T0820	15,88	5/8	16,12	.635	1,6	1/16						●	

CNGX

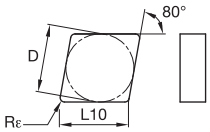




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGX120708T01020	CNGX452T0420	12,70	1/2	12,90	.508	0,8	1/32	●	●					
CNGX120708T02020	CNGX452T0820	12,70	1/2	12,90	.508	0,8	1/32				●	●	●	
CNGX120712E	CNGX453E	12,70	1/2	12,90	.508	1,2	3/64		●					
CNGX120712T01020	CNGX453T0420	12,70	1/2	12,90	.508	1,2	3/64	●	●					
CNGX120712T02020	CNGX453T0820	12,70	1/2	12,90	.508	1,2	3/64				●	●	●	
CNGX120716E	CNGX454E	12,70	1/2	12,90	.508	1,6	1/16		●					
CNGX120716T02020	CNGX454T0820	12,70	1/2	12,90	.508	1,6	1/16				●	●	●	
CNGX160716T02020	CNGX554T0820	15,88	5/8	16,12	.635	1,6	1/16				●	●	●	

CNGX-FW



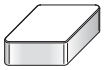


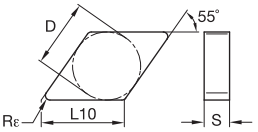
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
CNGX120708T01020FW	CNGX452T0420FW	12,70	1/2	12,90	.508	0,8	1/32						●	
CNGX120712T01020FW	CNGX453T0420FW	12,70	1/2	12,90	.508	1,2	3/64						●	
CNGX120716T01020FW	CNGX454T0420FW	12,70	1/2	12,90	.508	1,6	1/16						●	

● first choice
○ alternate choice

	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P				●	●	●	
M							
K							
N							
S	●	●	●				
H	○		●				●

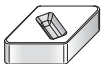
DNGN

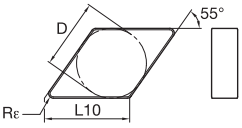




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGN150412T01020	DNG433T0420	12,70	1/2	15,50	.610	1,2	3/64
DNGN150704T01020	DNG451T0420	12,70	1/2	15,50	.610	0,4	1/64
DNGN150708T01020	DNG452T0420	12,70	1/2	15,50	.610	0,8	1/32
DNGN150712T01020	DNG453T0420	12,70	1/2	15,50	.610	1,2	3/64
DNGN150716T01020	DNG454T0420	12,70	1/2	15,50	.610	1,6	1/16

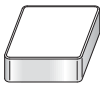
DNGX

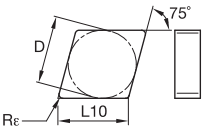




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGX120708T02020	DNGX120708T02020	10,00	.3937	12,21	.481	0,8	1/32
DNGX120712T02020	DNGX120712T02020	10,00	.3937	12,21	.481	1,2	3/64
DNGX120716T02020	DNGX120716T02020	10,00	.3937	12,21	.481	1,6	1/16
DNGX150708T01020	DNGX452T0420	12,70	1/2	15,50	.610	0,8	1/32
DNGX150708T02020	DNGX452T0420	12,70	1/2	15,50	.610	0,8	1/32
DNGX150712T01020	DNGX453T0420	12,70	1/2	15,50	.610	1,2	3/64
DNGX150712T02020	DNGX453T0820	12,70	1/2	15,50	.610	1,2	3/64
DNGX150716T01020	DNGX454T0420	12,70	1/2	15,50	.610	1,6	1/16
DNGX150716T02020	DNGX454T0820	12,70	1/2	15,50	.610	1,6	1/16

ENG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
ENGN130412T02020	ENG433T0820	12,70	1/2	13,15	.518	1,2	3/64
ENGN130708T01020	ENG452T0420	12,70	1/2	13,15	.518	0,8	1/32
ENGN130712T01020	ENG453T0420	12,70	1/2	13,15	.518	1,2	3/64
ENGN130712T02020	ENG453T0820	12,70	1/2	13,15	.518	1,2	3/64
ENGN130716T02020	ENG454T0820	12,70	1/2	13,15	.518	1,6	1/16


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

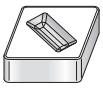

B24–B31

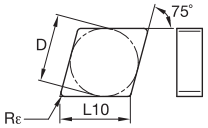

B32–B37

● first choice
○ alternate choice

P														
M														
K										●	●	●		
N														
S									●	●	●			
H									○		●			●

■ ENGX

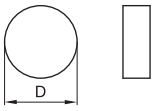




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
ENGX130716T02020	ENGX454T0820	12,70	1/2	13,15	.518	1,6	1/16						●	

■ RNGN





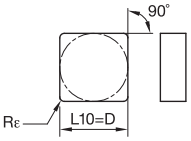
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RNGN090300T01020	RNG32T0420	9,53	3/8	–	–	–	–			●				
RNGN090400T00520	RNG33T0220	9,53	3/8	–	–	–	–			●				
RNGN120300T01020	RNG42T0420	12,70	1/2	–	–	–	–							●
RNGN120400E	RNG43E	12,70	1/2	–	–	–	–	●	●					
RNGN120400T01020	RNG43T0420	12,70	1/2	–	–	–	–	●	●	●				●
RNGN120400T02020	RNG43T0820	12,70	1/2	–	–	–	–				●	●	●	
RNGN120700E	RNG45E	12,70	1/2	–	–	–	–	●	●	●				
RNGN120700T00520	RNG45T0220	12,70	1/2	–	–	–	–			●				
RNGN120700T00525	RNG45T0225	12,70	1/2	–	–	–	–		●					
RNGN120700T01020	RNG45T0420	12,70	1/2	–	–	–	–	●	●	●				●
RNGN120700T01025	RNG45T0425	12,70	1/2	–	–	–	–	●	●	●				
RNGN120700T02020	RNG45T0820	12,70	1/2	–	–	–	–				●	●	●	
RNGN120700T10015	RNG45T4015	12,70	1/2	–	–	–	–			●				
RNGN120700T15015	RNG45T6015	12,70	1/2	–	–	–	–			●				
RNGN150700T02020	RNG55T0820	15,88	5/8	–	–	–	–						●	
RNGN150700T20015	RNG55T8015	15,88	5/8	–	–	–	–			●				
RNGN190700E	RNG65E	19,05	3/4	–	–	–	–	●	●					
RNGN190700T01020	RNG65T0420	19,05	3/4	–	–	–	–	●	●					
RNGN190700T20015	RNG65T8015	19,05	3/4	–	–	–	–			●				
RNGN250700T01020	RNG85T0420	25,40	1	–	–	–	–		●					
RNGN250700T20015	RNG85T8015	25,40	1	–	–	–	–			●				
RNGN250900E	RNG86E	25,40	1	–	–	–	–		●					

● first choice
○ alternate choice

P								
M								
K					●	●	●	
N								
S	●	●	●					
H	○		●					●

SNGN

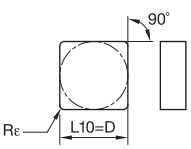




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGN090308T01020	SNG322T0420	9,53	3/8	9,53	.375	0,8	1/32			●				
SNGN090308T02020	SNG322T0820	9,53	3/8	9,53	.375	0,8	1/32						●	
SNGN090312T01020	SNG323T0420	9,53	3/8	9,53	.375	1,2	3/64							●
SNGN120408T01020	SNG432T0420	12,70	1/2	12,70	.500	0,8	1/32	●	●	●				●
SNGN120408T02020	SNG432T0820	12,70	1/2	12,70	.500	0,8	1/32					●	●	
SNGN120412T01020	SNG433T0420	12,70	1/2	12,70	.500	1,2	3/64	●	●	●				●
SNGN120412T02020	SNG433T0820	12,70	1/2	12,70	.500	1,2	3/64				●	●	●	
SNGN120416T01020	SNG434T0420	12,70	1/2	12,70	.500	1,6	1/16	●	●	●				●
SNGN120416T02020	SNG434T0820	12,70	1/2	12,70	.500	1,6	1/16						●	
SNGN120424T02020	SNG436T0820	12,70	1/2	12,70	.500	2,4	3/32						●	
SNGN120432T02020	SNG438T0820	12,70	1/2	12,70	.500	3,2	1/8						●	
SNGN120704T01020	SNG451T0420	12,70	1/2	12,70	.500	0,4	1/64							●
SNGN120708T01020	SNG452T0420	12,70	1/2	12,70	.500	0,8	1/32		●	●				●
SNGN120712T01020	SNG453T0420	12,70	1/2	12,70	.500	1,2	3/64	●	●	●				●
SNGN120712T02020	SNG453T0820	12,70	1/2	12,70	.500	1,2	3/64					●	●	
SNGN120716T01020	SNG454T0420	12,70	1/2	12,70	.500	1,6	1/16	●	●	●				●
SNGN120716T02020	SNG454T0820	12,70	1/2	12,70	.500	1,6	1/16						●	
SNGN120720T05020	SNG455T2020	12,70	1/2	12,70	.500	2,0	5/64			●				
SNGN150712T02020	SNG553T0820	15,88	5/8	15,88	.625	1,2	3/64						●	
SNGN190412T02020	SNG633T0820	19,05	3/4	19,05	.750	1,2	3/64						●	
SNGN190416T02020	SNG634T0820	19,05	3/4	19,05	.750	1,6	1/16						●	
SNGN190616E	SNG644E	19,05	3/4	19,05	.750	1,6	1/16	●	●					
SNGN190616T01020	SNG644T0420	19,05	3/4	19,05	.750	1,6	1/16	●	●					
SNGN190716T20015	SNG654T8015	19,05	3/4	19,05	.750	1,6	1/16			●				
SNGN190720T10015	SNG655T4015	19,05	3/4	19,05	.750	2,0	5/64			●				
SNGN190724E	SNG656E	19,05	3/4	19,05	.750	2,4	3/32	●	●					
SNGN190724T20015	SNG656T8015	19,05	3/4	19,05	.750	2,4	3/32			●				

SNGX





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SNGX120708T01020	SNGX452T0420	12,70	1/2	12,70	.500	0,8	1/32	●						
SNGX120708T02020	SNGX452T0820	12,70	1/2	12,70	.500	0,8	1/32						●	
SNGX120712T01020	SNGX453T0420	12,70	1/2	12,70	.500	1,2	3/64	●	●					
SNGX120712T02020	SNGX453T0820	12,70	1/2	12,70	.500	1,2	3/64				●	●	●	
SNGX120716T01020	SNGX454T0420	12,70	1/2	12,70	.500	1,6	1/16	●	●					
SNGX120716T02020	SNGX454T0820	12,70	1/2	12,70	.500	1,6	1/16				●	●	●	
SNGX150712T02020	SNGX553T0820	15,88	5/8	15,88	.625	1,2	3/64					●	●	
SNGX150716T02020	SNGX554T0820	15,88	5/8	15,88	.625	1,6	1/16				●	●	●	
SNGX150724T02020	SNGX556T0820	15,88	5/8	15,88	.625	2,4	3/32						●	


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23


B24–B31

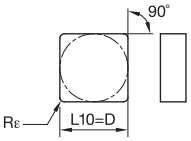

B32–B37

● first choice
○ alternate choice

		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

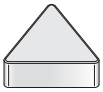
SNGX-FW

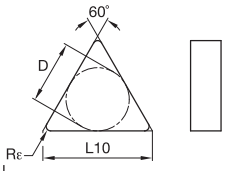




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNGX120712T01020FW	SNGX453T0420FW	12,70	1/2	12,70	.500	1,2	3/64

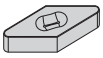
TNG

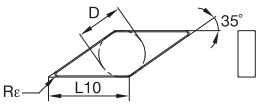




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGN110308T01020	TNG222T0420	6,35	1/4	11,00	.433	0,8	1/32
TNGN160408T01020	TNG332T0420	9,53	3/8	16,50	.650	0,8	1/32
TNGN160408T02020	TNG332T0820	9,53	3/8	16,50	.650	0,8	1/32
TNGN160708T01020	TNG352T0420	9,53	3/8	16,50	.650	0,8	1/32
TNGN160412T01020	TNG333T0420	9,53	3/8	16,50	.650	1,2	3/64
TNGN160412T02020	TNG333T0820	9,53	3/8	16,50	.650	1,2	3/64
TNGN160712T01020	TNG353T0420	9,53	3/8	16,50	.650	1,2	3/64
TNGN220408T01020	TNG432T0420	12,70	1/2	22,00	.866	0,8	1/32
TNGN220408T02020	TNG432T0820	12,70	1/2	22,00	.866	0,8	1/32
TNGN220412T01020	TNG433T0420	12,70	1/2	22,00	.866	1,2	3/64
TNGN220416T01020	TNG434T0420	12,70	1/2	22,00	.866	1,6	1/16
TNGN220416T02020	TNG434T0820	12,70	1/2	22,00	.866	1,6	1/16

VNGX





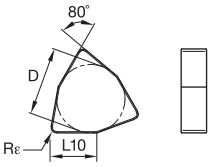
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNGX160712T02020	VNGX353T0820	9,53	3/8	16,61	.654	1,2	3/64
VNGX160716T02020	VNGX354T0820	9,53	3/8	16,61	.654	1,6	1/16

● first choice
○ alternate choice

		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

WNGX

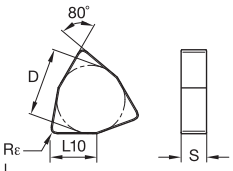




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNGX080708T02020	WNGX452T0820	12,70	1/2	8,69	.342	0,8	1/32
WNGX080712T02020	WNGX453T0820	12,70	1/2	8,69	.342	1,2	3/64
WNGX080716T02020	WNGX454T0820	12,70	1/2	8,69	.342	1,6	1/16

WNGX-FW





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNGX080708T01020FW	WNGX452T0420FW	12,70	1/2	8,69	.342	0,8	1/32
WNGX080712T01020FW	WNGX453T0420FW	12,70	1/2	8,69	.342	1,2	3/64
WNGX080716T01020FW	WNGX454T0420FW	12,70	1/2	8,69	.342	1,6	1/16


C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

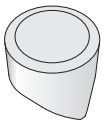
● first choice
○ alternate choice

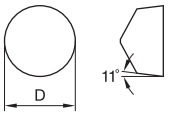
| | | |

● first choice
○ alternate choice

	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P	●	●	●				
M	○		●				●
K				●	●	●	
N							
S	●	●	●				
H							

RPGX

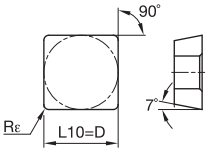




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
RPGX060400T00520	RPGV23T0220	6,35	1/4	–	–	–	–			●				
RPGX060400T01020	RPGV23T0420	6,35	1/4	–	–	–	–			●				
RPGX090700E	RPGV35E	9,53	3/8	–	–	–	–	●	●					
RPGX090700T00520	RPGV35T0220	9,53	3/8	–	–	–	–			●				
RPGX090700T01020	RPGV35T0420	9,53	3/8	–	–	–	–	●	●	●				
RPGX120700E	RPGV45E	12,70	1/2	–	–	–	–	●	●					
RPGX120700T00520	RPGV45T0220	12,70	1/2	–	–	–	–			●				
RPGX120700T01020	RPGV45T0420	12,70	1/2	–	–	–	–	●	●	●				

SCG-FW





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
SCGN090408EFW	SCG332EFW	9,53	3/8	9,53	.375	0,8	1/32				●			
SCGN090408EFW	SCG332FW	9,53	3/8	9,53	.375	0,8	1/32						●	


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

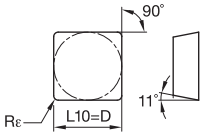

B32–B37

● first choice
○ alternate choice

		KYS25	KYS30	KY4300	KYK10	KYK25	KY3500	KY4400
P								
M								
K					●	●	●	
N								
S		●	●	●				
H		○		●				●

■ SPGN

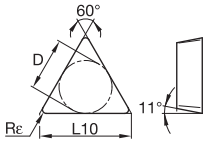




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SPGN090308T01020	SPG322T0420	9,53	3/8	9,53	.375	0,8	1/32
SPGN120308T01020	SPG422T0420	12,70	1/2	12,70	.500	0,8	1/32

■ TPGN





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGN110304T01020	TPG221T0420	6,35	1/4	11,00	.433	0,4	1/64
TPGN110308T00520	TPG222T0220	6,35	1/4	11,00	.433	0,8	1/32
TPGN110308T01020	TPG222T0420	6,35	1/4	11,00	.433	0,8	1/32
TPGN160304T01020	TPG321T0420	9,53	3/8	16,50	.650	0,4	1/64
TPGN160308T00520	TPG322T0220	9,53	3/8	16,50	.650	0,8	1/32
TPGN160308T01020	TPG322T0420	9,53	3/8	16,50	.650	0,8	1/32
TPGN160308T02020	TPG322T0820	9,53	3/8	16,50	.650	0,8	1/32
TPGN160312T01020	TPG323T0420	9,53	3/8	16,50	.650	1,2	3/64
TPGN160312T02020	TPG323T0820	9,53	3/8	16,50	.650	1,2	3/64
TPGN220408T02020	TPG432T0820	12,70	1/2	22,00	.866	0,8	1/32
TPGN220412T02020	TPG433T0820	12,70	1/2	22,00	.866	1,2	3/64



Beyond™ ISO Ceramic Insert Expansion

KYK10™, KYK25™, KYS25™, and KYS30™

The new Beyond ISO KYK Ceramic Inserts are the first choice for high speed, continuous, and lightly interrupted turning applications in grey cast iron. These premium ceramic solutions for continuous cast iron turning applications offer improved fracture toughness, better wear resistance, and extended application range. By combining KYK10 and CVD-coated KYK25 with Kennametal's other ceramic grades for cast iron materials, Kennametal provides a complete, high-performance ceramic portfolio that can be optimised to reduce machining cycle times and lower overall manufacturing costs.

KYK10:
- Best suited for continuous turning of cast iron materials and in lightly interrupted cuts.

KYK25:
- Excellent wear resistance and pre-coat treatment allows for very consistent tool life and performance in a multitude of cast iron applications.

KYS25:
- Excellent surface finish, lower cutting forces, higher speeds.

KYS30:
- Excellent toughness and depth-of-cut notch resistance.

Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®



Superhard Materials • PCBN and PCD

Superhard Tool Materials **B132–B173**

Application Areas B134–B135

PCBN B137–B163

PCD B165–B173

Superhard Inserts **B174–B197**

Properties of PCD and PCBN cutting tool materials

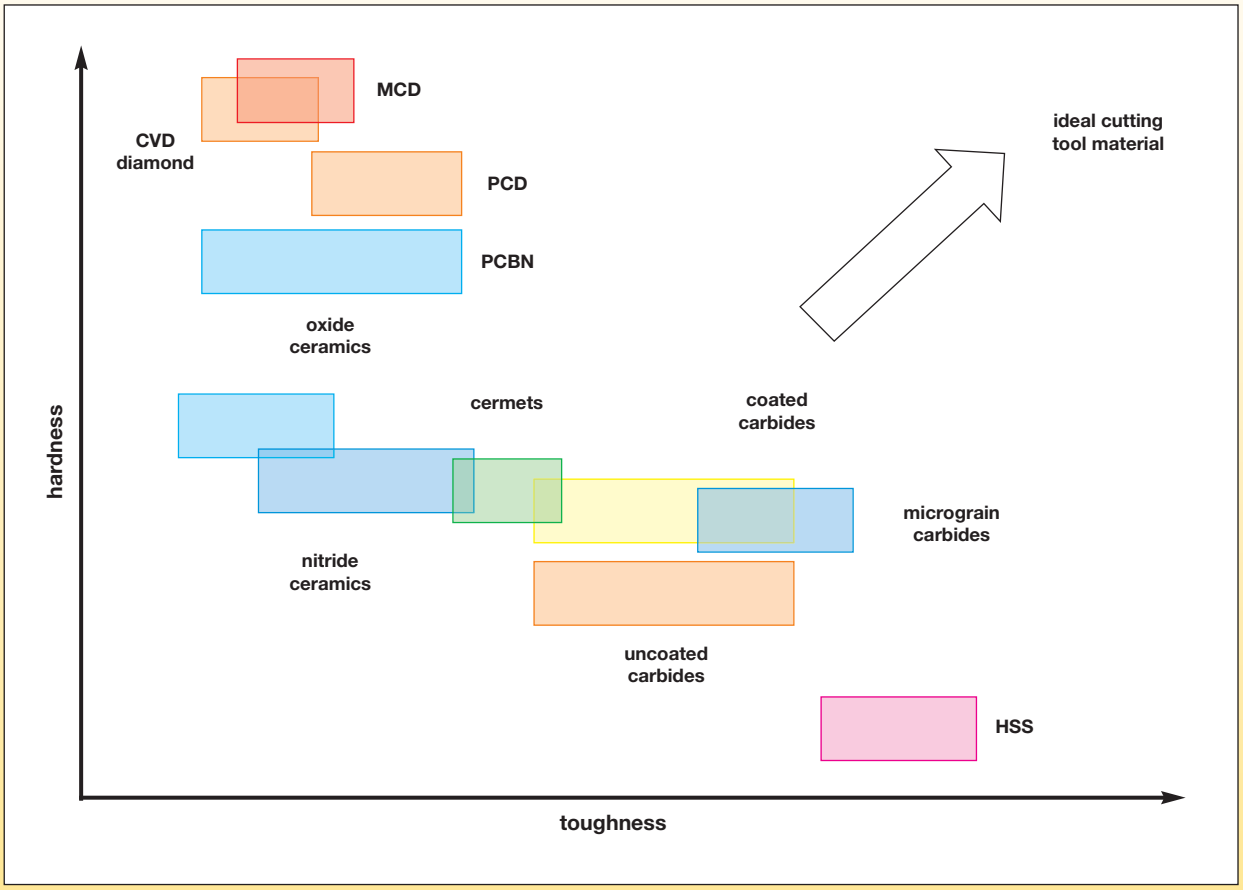
The current global metalcutting climate has put increased focus on high productivity and cost reductions coming from cutting tools. These requirements lead to the rapid growth and implementation of cutting tools using superhard materials. As the name implies, these materials have a significant advantage in hardness over conventional tool materials, which from the end user point of view, translates into increased productivity (higher cutting speeds, longer tool life, etc.), lower tooling cost per part, and also, the ability to process materials previously un-machinable with conventional tooling.

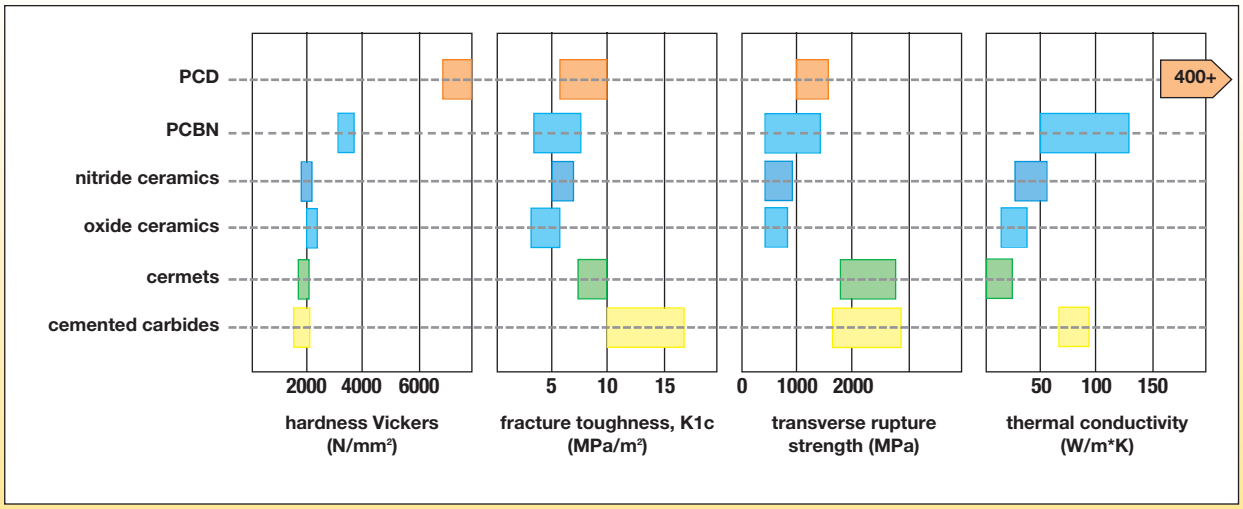
The most widely known superhard materials are diamond and cubic boron nitride. Our industry uses the polycrystalline forms of these materials, i.e., polycrystalline diamond (PCD) and polycrystalline boron nitride (PCBN). PCD tooling is mainly targeted at the machining of non-ferrous materials (e.g., aluminum alloys, plastics, CFRPs, composites, titanium alloys, ceramics, carbides, etc.) whereas PCBN targets iron-based alloys (e.g., cast irons, hard steels, iron-based composites, etc.)

Kennametal is at the forefront of developing and implementing superhard materials in our standard and special tooling solutions across all our product lines. Kennametal's approach to superhard tooling starts with customer needs and constraints. We then use fundamental research to develop the best superhard solutions that would make available the best value for the customer and respond to their specific demands.

Where to use PCD and PCBN

Diamond and cubic boron nitride (CBN) are the most commonly known superhard materials.
For cutting tools, they are used in their polycrystalline form, i.e., PCD and PCBN.





Choosing between PCD and PCBN

It is primarily their thermochemical stability that determines the suitability of the two materials for specific areas of application. For standard PCD, this means that it is restricted to workpiece materials where the cutting temperature does not exceed 700 °C and has no affinity with carbon if diffusion wear of the cutting edge is to be avoided at elevated temperatures. Operations that satisfy these conditions are, for example, the machining of non-ferrous metals, wood, plastics, and minerals where PCD mainly competes against tungsten carbide and, to some extent, high-speed steel.

By contrast, PCBN is thermally stable up to approximately 1200 °C and has high resistance to chemical attack. As a result, extreme temperatures, such as occur when machining hard ferrous metals, do not pose difficulties and can be used to promote self-induced hot cutting. Therefore, technical and economic benefits can be achieved, particularly in comparison with grinding, and in most cases, performance is significantly better than that attainable with conventional tool materials, such as tungsten carbides and ceramics.

There are limitations for PCBN, however, in the machining of austenitic steels and ferritic cast irons, where more reactive phases result in increased PCBN edge wear.



PCBN

Increased productivity can be achieved with PCBN tools through:

- Higher cutting speeds.
- Higher feed rates.
- Longer tool life.
- Less machine downtime.

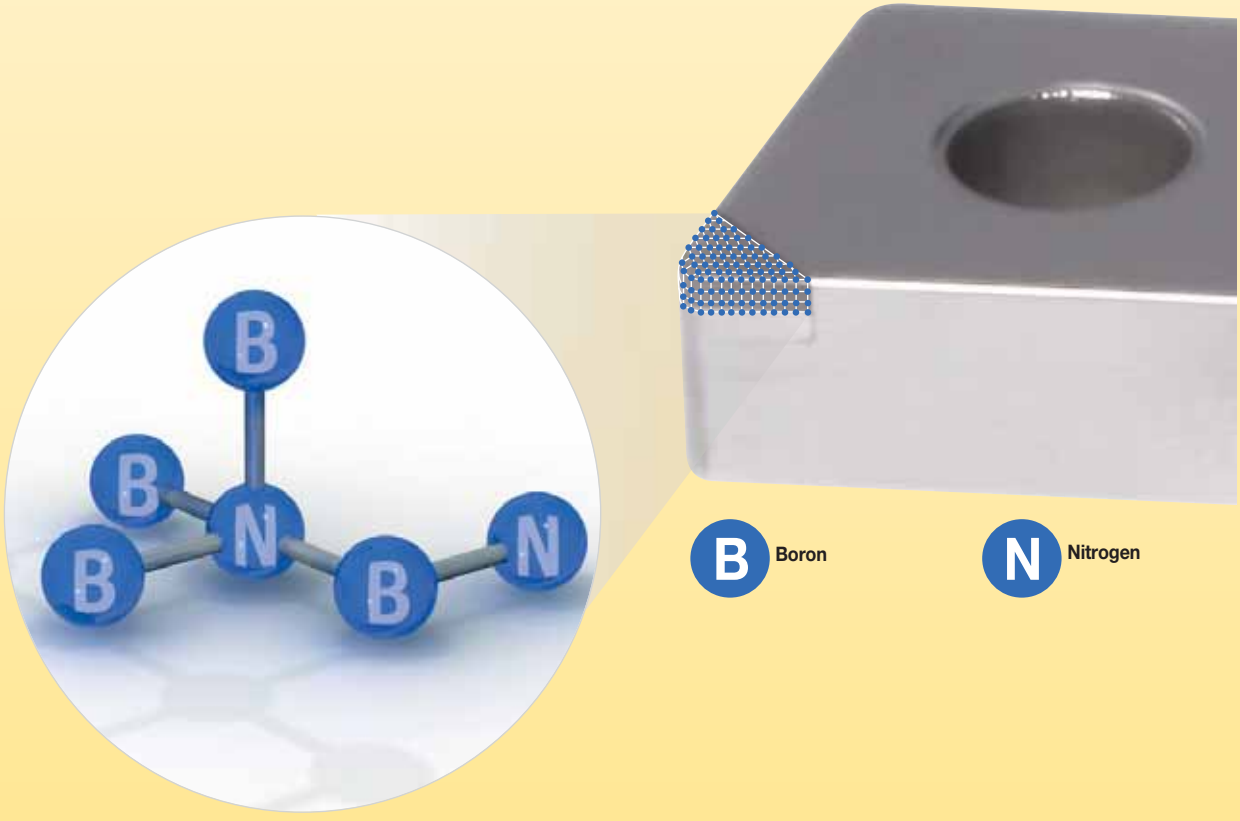
- More parts per machine means direct tool costs can be reduced.

- Very tight workpiece surface finish tolerances can be achieved on difficult-to-machine materials.

- PCBN can be used to machine ferrous materials in the hardened condition as an alternative to grinding, making it possible to substantially reduce component machining times.

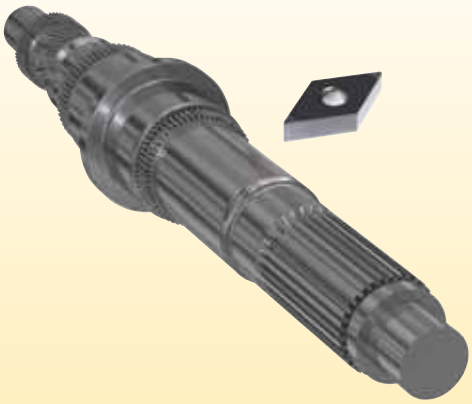
- PCBN offers environmental benefits — the generation of grinding sludge is eliminated and the chips can be recycled.

- Improved surface integrity of critical components.



Grinding vs. Hard Turning





Grinding

- Size tolerance specifications beyond the capability of turning.
- Surface finish requirements too tight for hard turning.

vs.

Hard Turning

- Size tolerance specifications beyond the capability of turning.
- Complex geometry that makes single-point turning more practical.
- Relatively high metal removal rates.
- Dry machining.
- Faster machine setup.
- Faster cycle times.
- I.D. and O.D. machining on one machine.

Where does PCBN work?

PCBN is suitable for machining a wide variety of workpiece materials, mainly ferrous alloys.

The application areas may be broadly categorized as follows:

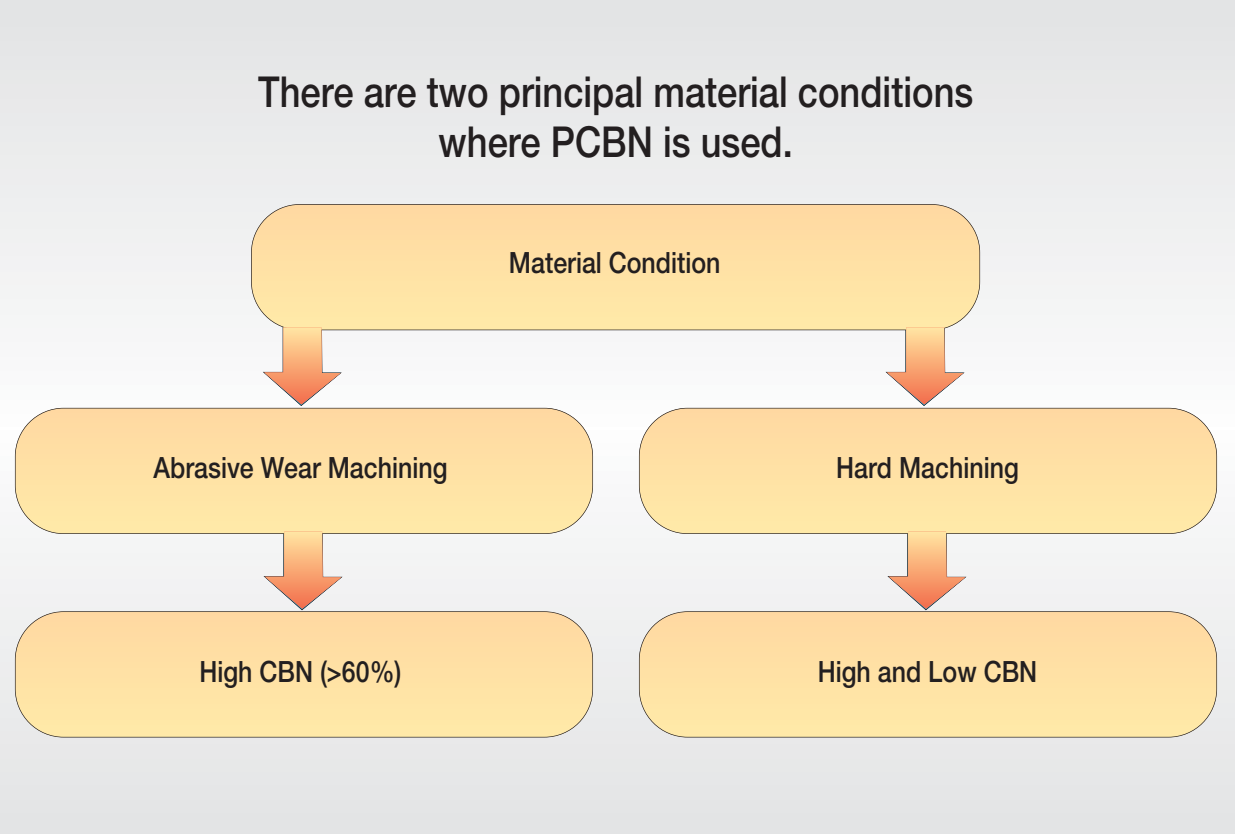
Hardened Steels	Cast Irons	Superalloys	Powder Metallurgy Steels

Certain classes of PCBN materials are associated with each particular application.

For best cost performance, proper selection of the following is essential:

- Format of the insert.
- Grade.
- Edge prep.
- Application data.

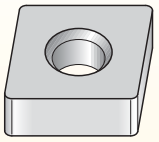
PCBN is known as the second hardest material



PCBN insert formats

Solid Inserts

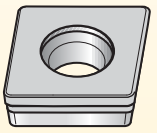
- Inserts are made only from PCBN.
- No material joint.
- Best heat absorption capacity.
- Can work at highest temperatures.



solid

Full-Face Inserts

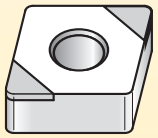
- Inserts are made from a presintered carbide/PCD or PCBN joint.
- Elimination of the brazing joint. Less delamination.
- Better heat absorption capacity.
- Can work at higher temperatures than tipped tools.
- Facilitate larger depth of cut compared to the same size tipped insert.
- The blanks are available with “A” and “W” ISO-style pin-lock holes.



full-face

Tipped Inserts

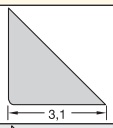
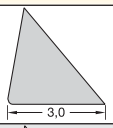
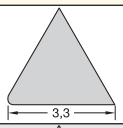
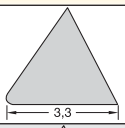
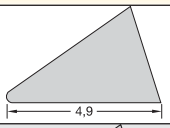
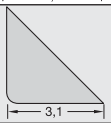
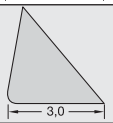
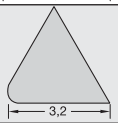
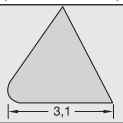
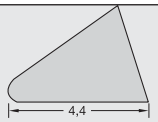
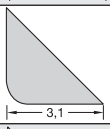
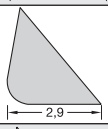
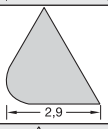
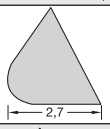
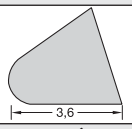
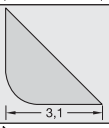
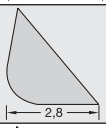
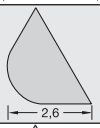
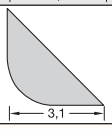
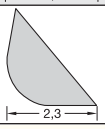
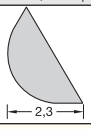
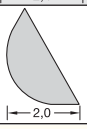
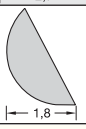
- Require a carrier and substrate for the insert.
- The tips are brazed to the substrate. Various brazing methods are applied.
- The substrate has to have a pocket that will accommodate and support the tip.
- In these types of tools, the braze joint represents the weak link, so the brazing operation is very important and should be carefully controlled and executed.
- The main advantage of tipped tools over full-faced inserts is the lower cost.



tipped

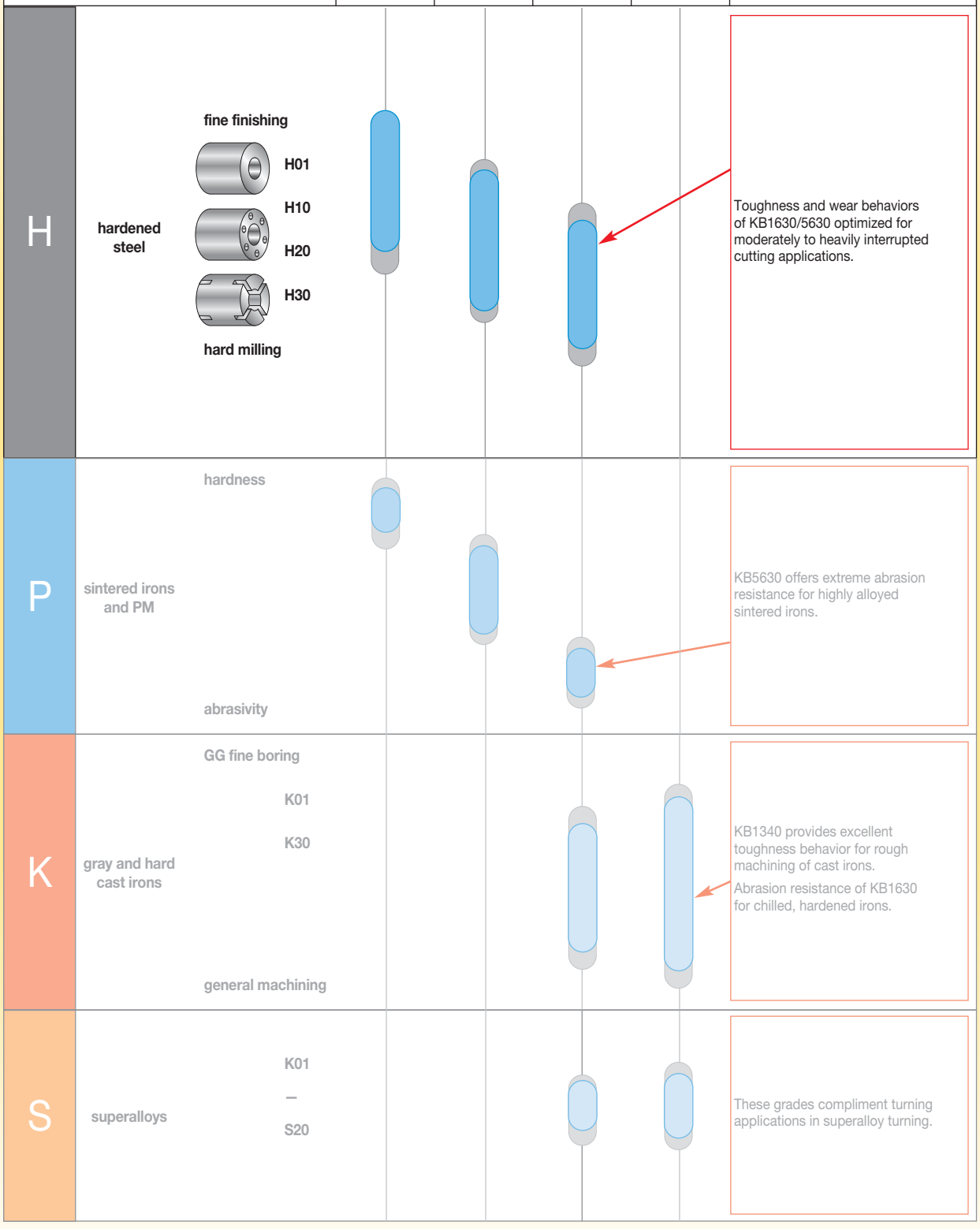
Kennametal inserts

This table shows approximate tip sizes of Kennametal CBN inserts depending on style and corner radius.
Please note that the maximum cutting depth is not more than 80% of the tip length.

radius	insert shape				
	S	C, W	T	D, K	V
R 0,2mm	 3,1	 3,0	 3,3	 3,3	 4,9
R 0,4mm	 3,1	 3,0	 3,2	 3,1	 4,4
R 0,8mm	 3,1	 2,9	 2,9	 2,7	 3,6
R 1,2mm	 3,1	 2,8	 2,6	 2,4	 2,7
R 1,6mm	 3,1	 2,3	 2,3	 2,0	 1,8

PCBN portfolio

Grade	KB5610 (KB1610)	KB5625 (KB1625)	KB5630 (KB1630)	KB1340	Grade
CBN%	50	65	90	90	CBN%





PCBN Hard Turning Selection System

Introduction

This guide will help you choose the PCBN grade, edge preparations, nose radius, feed, and recommended speed range for your hard turning applications. These recommendations will establish a starting point for optimization of the application. Where possible, this guide will lead you to standard line items. If this is not the case, the items can still be obtained through the QTSP (Quick-Turn Solutions Program) or ordered as specials.

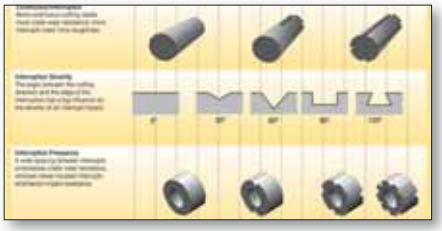
We will classify hard turning operations as any turning or boring of ferrous-based workpiece materials with a hardness (HRC) higher than 45. For workpieces with lower hardness values, PCBN is not recommended.

To use the guide, you will need this application information:

- Workpiece design: interruptions, shape, and frequency.
- Workpiece material specifications: hardness, superficial or through treatment, and carbide forming alloying elements (that increase the abrasivity of the material).
- Depth of cut.
- Surface finish requirements.
- Preset conditions, such as specific nose radius, limited feed, etc.
- Setup limitations related to machine tool, fixturing, etc.
- Tool life criteria, e.g., surface finish, dimensional tolerance, cutting force, etc.

PCBN Hard Turning • Selection System Overview

Step 1 • Choosing the PCBN Grade

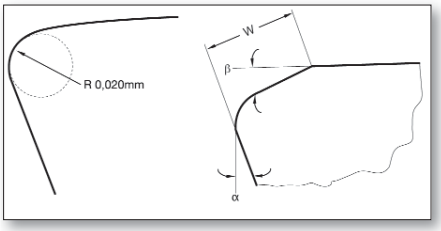




Step 1, reference pages B144–B145.

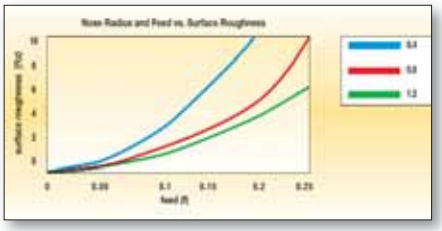
Step 2 • PCBN Edge Preparation Features

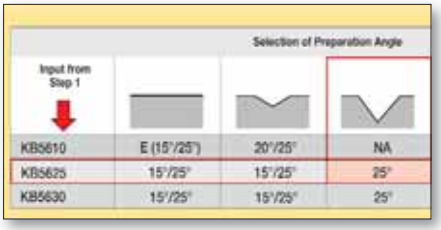
Edge Preparation Specifications		
E	Hone Only	0,020mm
S01015	W x β = 0,1mm x 15°	
S01025	W x β = 0,1mm x 25°	



Step 2, reference page B145.

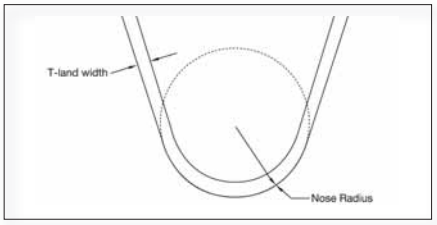
Step 3 • Selection of T-Land Angle

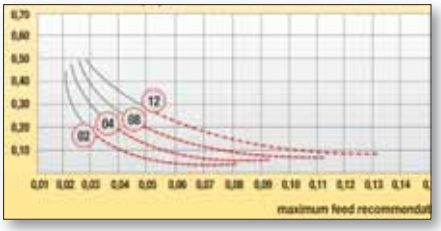




Step 3, reference page B145.

Step 4 • Selection of T-Land Width

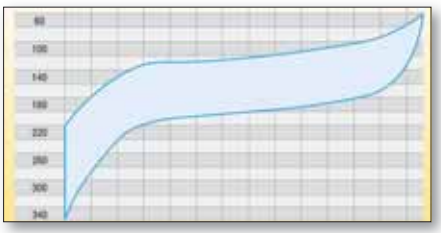




Step 4, reference page B146.

Step 5 • Choosing the Speed Range





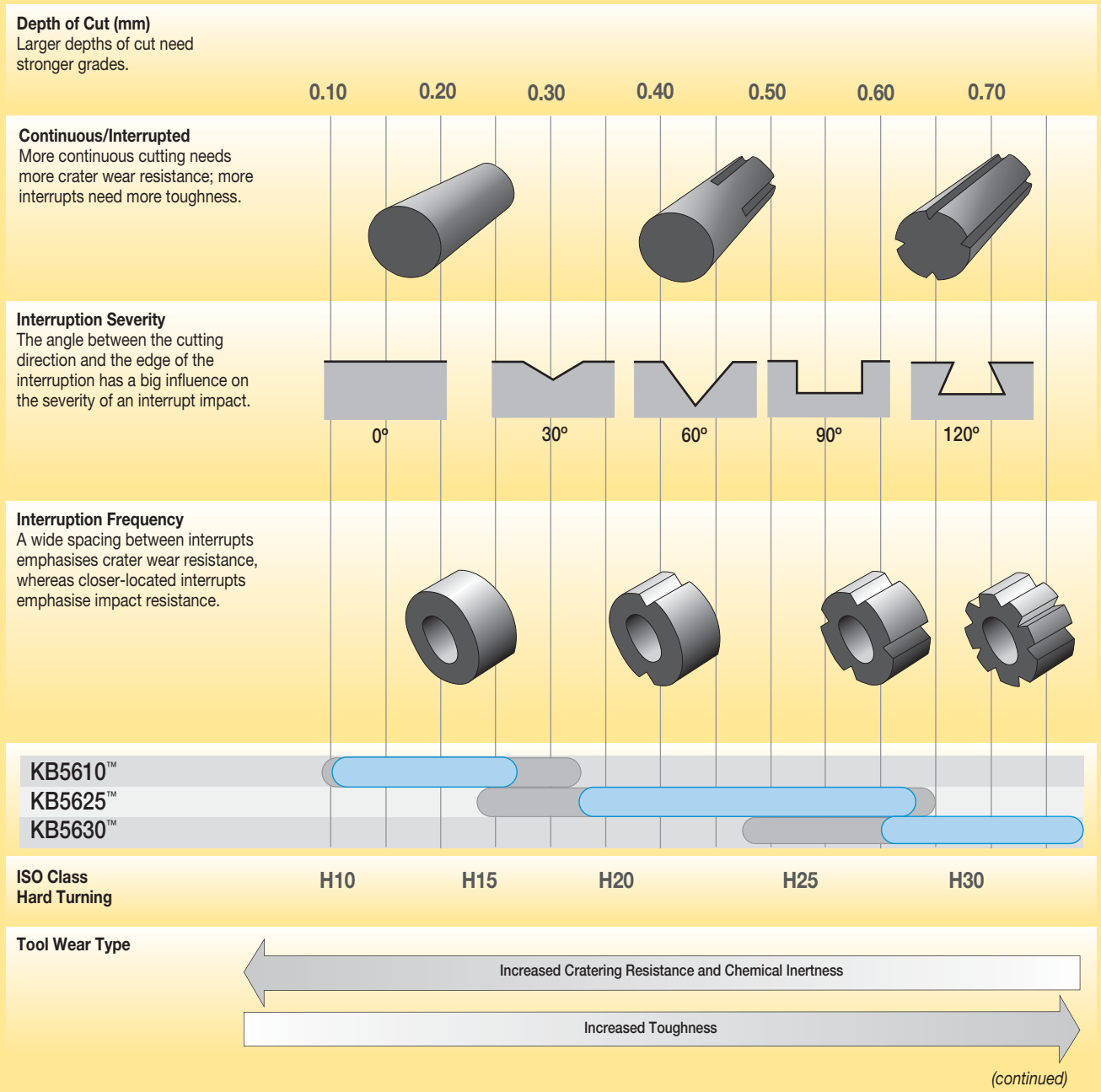
Step 5, reference page B147.

Grade Selection for Hard Turning

How to Use

Identify your application conditions. The most far right parameter will then determine the recommended grade(s). If more than one grade is intersected, it is recommended to first select the grade with the highest toughness (page B139) before optimizing using the Troubleshooting Guide (pages B142–B143).

Step 1 • Choosing the PCBN grade



(continued)

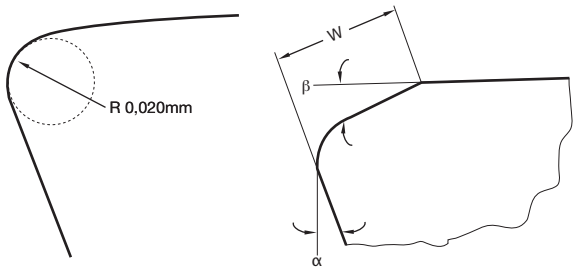
Step 1 • Choosing the PCBN grade *(continued)*

	cratering resistance	abrasive resistance	impact resistance	surface finish
KB5610™	***	*	*	***
KB5625™	**	**	**	**
KB5630™	*	***	***	**

*** = Best

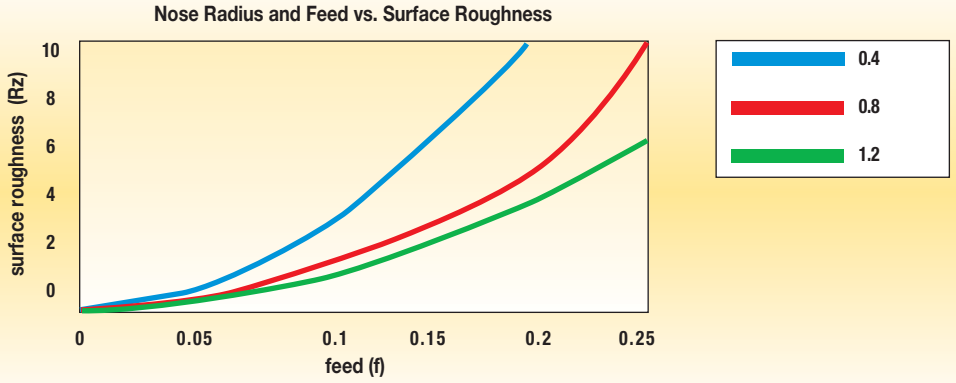
Step 2 • PCBN edge preparation features

Edge Preparation Specifications		
E	hone only	0,020mm
S01015	W x β = 0,1mm x 15°	
S01025	W x β = 0,1mm x 25°	



W – Edge Prep Width
α – Clearance Angle

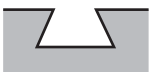
β – T-Land Angle



Step 3 • Selection of T-land angle

How to Use

Using the grade selection and the Interruption Severity from **Step 1**, select edge preparation angle or hone only, E, from the table **below**. Solutions in parenthesis are second options.

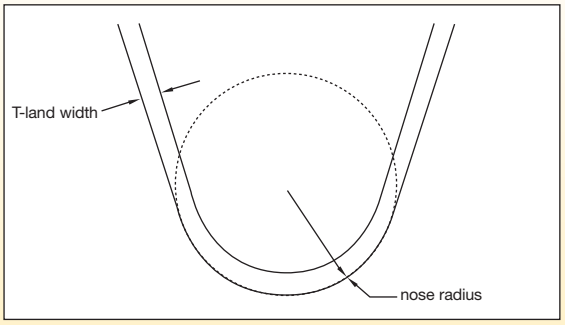
Selection of Preparation Angle					
input from Step 1 ↓					
KB5610	E (15°/25°)	20°/25°	NA	NA	NA
KB5625	15°/25°	15°/25°	20°/25°	25°	NA
KB5630	15°/25°	15°/25°	20°/25°	25°	25°/35°

Step 4 • Selection of T-land width

How to Use

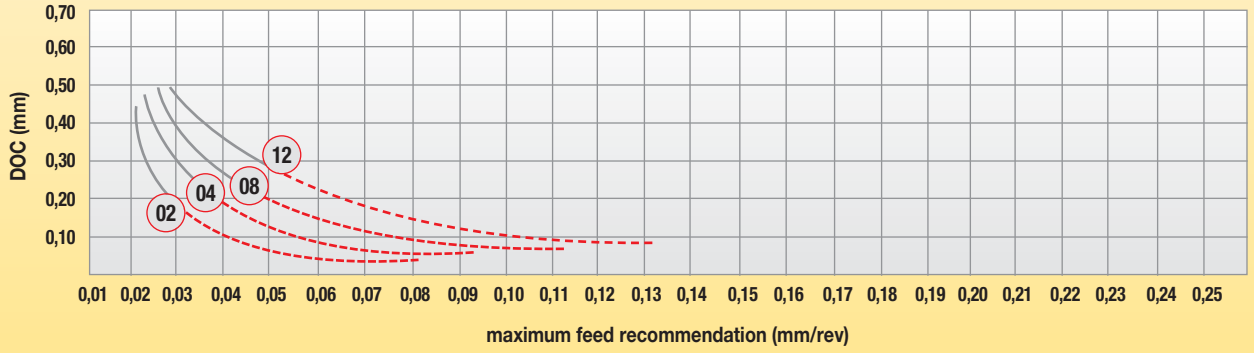
Example 1: If the feed, depth of cut, and the tool nose radius are fixed, use these values to see what T-land width should be used.

Example 2: If you want to use a specific T-land width or hone only edge, use the chart below to see what maximum feeds and depths of cut are recommended for different nose radii.



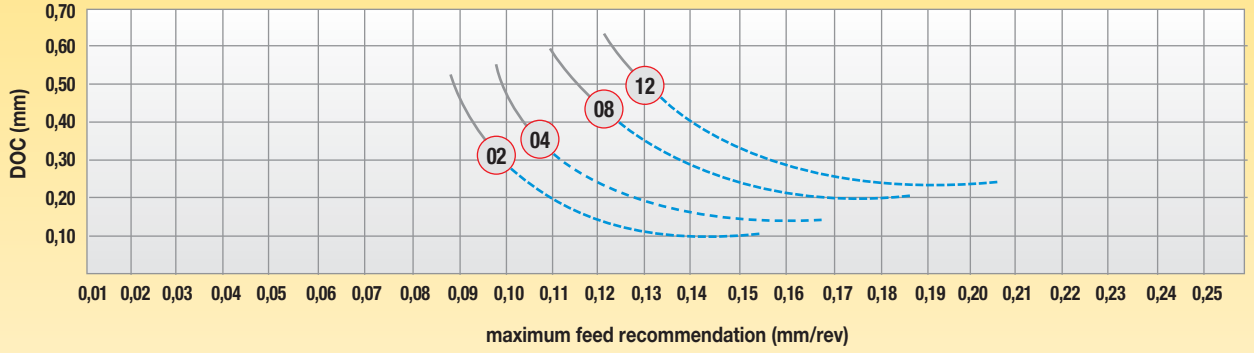
T-Land Width (W): E

Number in circle is NOSE RADIUS*



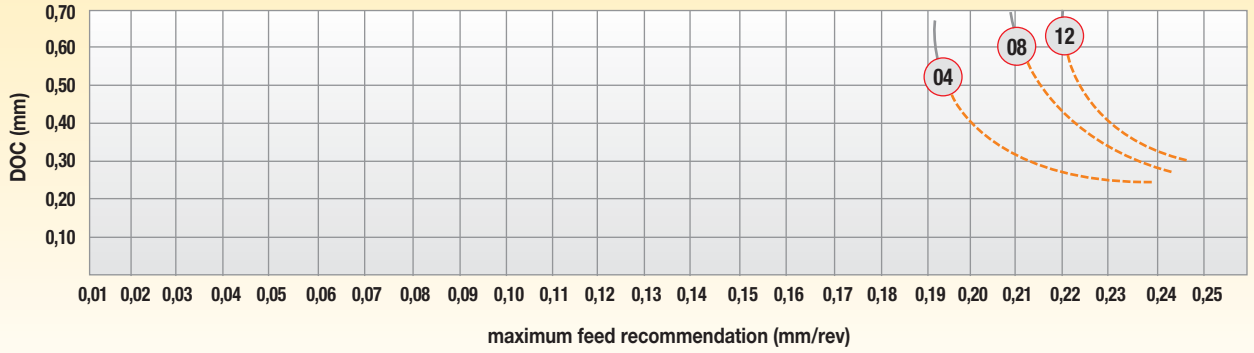
T-Land Width (W): 0,1mm

Number in circle is NOSE RADIUS*



T-Land Width (W): 0,2mm

Number in circle is NOSE RADIUS*



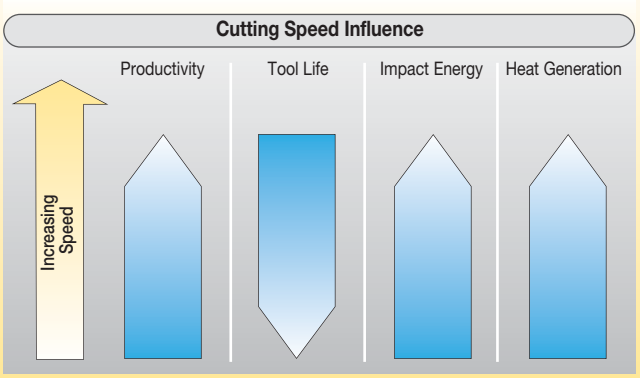
*NOTE: Colored lines represent proven solutions; gray lines represent theoretically possible solutions.

Step 5 • Choosing the speed range

How to Use

Using the application information, determine your position in the INPUT DATA table below and select the speed range area with which it intersects for each input parameter. If different speed ranges result, choose the lowest speed range.

The shaded area extends to the minimum and maximum speeds for the application. The suggested starting speeds can be taken as the minimum line of this range.



Speed Range Selection for Hard Turning

INPUT DATA

Depth of Cut (mm)
Larger depths of cut need stronger grades.

0,10 | 0,20 | 0,30 | 0,40 | 0,50 | 0,60 | 0,70

Interruption Severity
The angle between the cutting direction and the edge of the interruption has a big influence on the severity of an interrupt impact.

0° | 30° | 60° | 90° | 120°

Workpiece Hardness (HRC)

45 | 50 | 55 | 60 | 65

OUTPUT DATA

Speed Range (m/min)

60 | 100 | 140 | 180 | 220 | 260 | 300 | 340



CBN Inserts with Chipbreaker

For hardened steels, grinding is no longer the preferred method in finish turning operations because hard turning now drastically reduces cost per part. With high metal removal rates, faster machine setup, quicker cycle times, and greater flexibility, it is obviously the preferred method.

Despite these advantages, hard turning has sometimes had issues with poor chip control causing surface scratching and bird-nest formations. Kennametal solved these problems by integrating special chipbreaking geometries into two high-performance PCBN grades, giving customers total control of their hard machining.

Ideally, hardened steels are machined with a low or medium CBN content grade where the workpiece encounters few interruptions. However, because of CBN's structure, the industry had not been able to add chipbreaking technology to low content CBN inserts. KB5610™ with chipbreaker is, therefore, the first product of its type to deliver chipbreaking where it's most needed. KB5625™ with chipbreaker provides a chipbreaking solution for applications requiring more toughness.

Together, these tools give Kennametal customers industry-leading flexibility in choosing the right tool for the job.

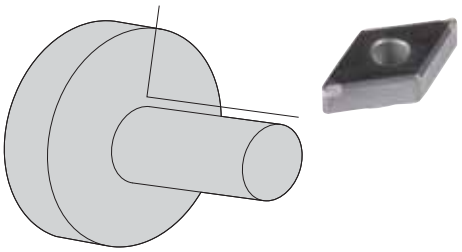
Features

- Chipbreaker for improved chip control.
- KB5610 ideal grade for continuous operations.
- KB5625 ideal grade for continuous and interrupted operations.

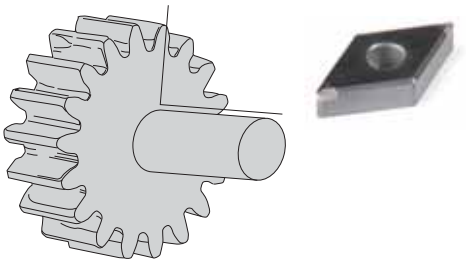
Benefits

- Improved surface quality to reduce scrap rates.
- Reduction of machine stops due to swarf issues to improve machine availability.
- Reduction of bird-nest formation to reduce clean up time.
- Two grades to choose from for best performance.

KB5610



KB5625



CBN Inserts

Insert without Chipbreaker



- Long chips.
- Bird-nest formation.

Insert with Chipbreaker



- Chips are broken.

Reverse gear face turning and chamfering

Workpiece: Reverse gear
Hardness: 58–62 HRC

	Competitor	Kennametal
Insert:	DNGG150412N-SV	DNGM159412S0125MT CB1
Grade:	—	KB5625
vc:	235 m/min (775 SFM)	235 m/min (775 SFM)
f:	0,25 mm/rev (.0098 in/rev)	0,35 mm/rev (.014 in/rev)
ap:	0,26mm (.0098")	0,26mm (.0098")
Pieces/edge:	600	900
Chip shape:	Snarling or infinite helix	Coiled with 3 turns

Result: Better chip control, high productivity (by increased feed), and 1.5x tool life

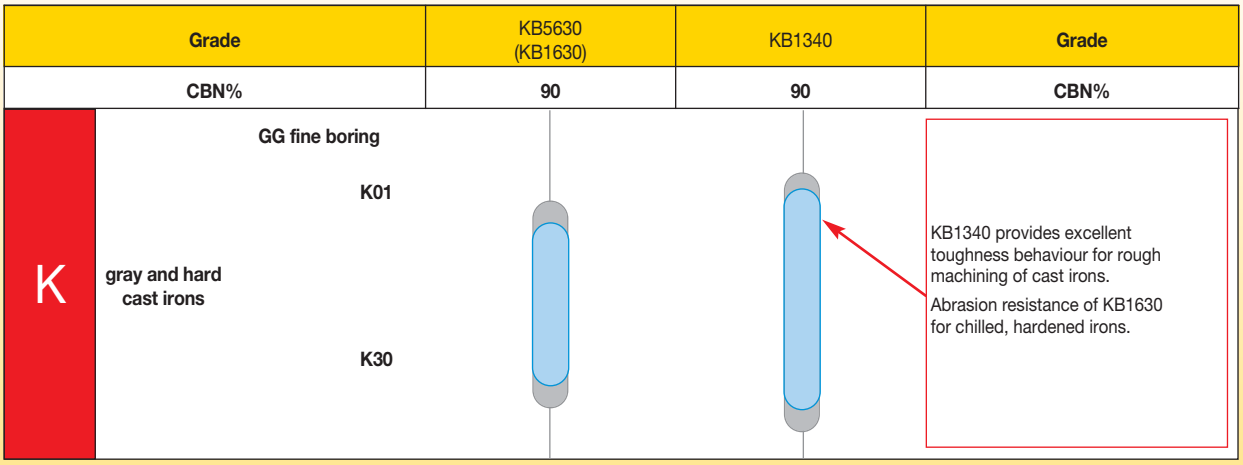
Hard material turning by using PCBN with chipbreaker

Workpiece: Tube
Hardness: 52–58 HRC

	Competitor	Kennametal
Insert:	DNGA442S0420MT	DNGM432S0525MTCB1
Grade:	—	KB5625
vc:	120 m/min (400 SFM)	120 m/min (400 SFM)
f:	0,15 mm/rev (.0059 in/rev)	0,15 mm/rev (.0059 in/rev)
ap:	0,3mm (.012")	0,3mm (.012")
Pieces/edge:	2	4
Chip shape:	Snarling or infinite helix	Discontinuous

Result: Better chip control and double tool life

PCBN portfolio



High content PCBN grades: KB1340™, KB1630™, and KB5630™

General Application Area

Continuous and interrupted machining of ferrous alloys where the main wear mode is abrasive and a strong edge is required.

Primary Target Workpiece Materials

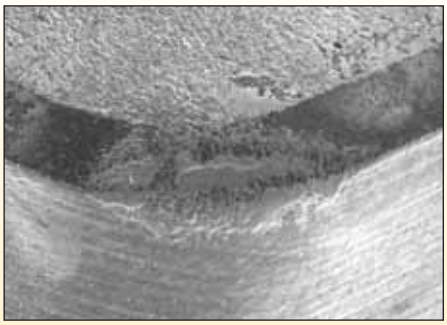
- Gray cast irons.
- High Cr content irons.
- Chilled and hardened irons.
- Co-, Ni-, and Fe-based hard facing alloys.
- Other alloys in which there is a high concentration of carbide forming elements, and the primary wear is abrasive.



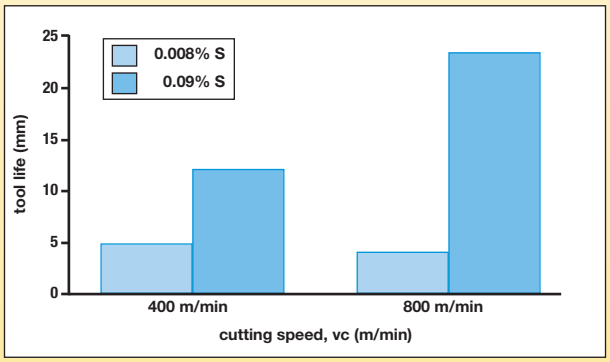
Machining gray cast iron

The largest application area for KB1340™ is machining of gray cast irons. Following are a few particulars of this application:

- GCI have to be machined dry. The application needs to generate high levels of heat in order to create a protective oxide layer on the tool.
- It is important to confirm with the customer that the GCI has been properly aged, and it has a sulphur content over 0.05%.
- The starting point for edge preparation should be .004" (0,10mm) x 20° for finishing (DOC <0,5mm) and .008" (0,20mm) x 20° for roughing.
- The edge preparation angle should increase if any interruptions are present, up to 35°.
- Lack of aging and/or low sulphur content can lead to a decrease in tool life of up to 10 times!
- A slow feed approach/engagement of the tool is recommended to minimize chipping and notching.



Proper application of KB1340 — formation of protective layer, tool life should exceed 70 km sliding distance.



Comparison of the life of PCBN cutting tools in machining two different gray cast irons, primarily differing in sulphur content.

Application recommendations

workpiece material	speed				feed				depth of cut			
	m/min		SFM		mm		in		mm		in	
	min	max	min	max	min	max	min	max	min	max	min	max
hot-work tool steels — roughing	50	150	165	495	0,2	0,5	0,008	0,020	0,8	3,0	0,031	0,118
cold-work tool steels — roughing	50	150	165	495	0,2	0,5	0,008	0,020	0,8	3,0	0,031	0,118
gray cast iron — roughing	700	1200	2310	3960	0,2	0,6	0,008	0,024	0,5	3,0	0,020	0,118
gray cast iron — finishing	750	1500	2475	4950	0,1	0,3	0,004	0,012	–	0,5	0,000	0,020
CGI and NCI — roughing	50	300	165	990	0,2	0,5	0,008	0,020	0,5	2,0	0,020	0,079
chilled cast iron — roughing	30	150	99	495	0,2	0,6	0,008	0,024	0,5	3,0	0,020	0,118
chilled cast iron — finishing	30	150	99	495	0,1	0,3	0,004	0,012	–	0,5	0,000	0,020
hard facings — as per bearing steel	60	200	198	660	0,1	0,5	0,004	0,020	0,2	3,0	0,008	0,118
high Cr irons	80	250	264	825	0,1	0,6	0,004	0,024	0,2	3,0	0,008	0,118

High-content PCBN grades are intended for use in negative rake clamp-type toolholders, boring, recessing tools, and milling heads. Due to the dynamic loads that occur in the machining of hard ferrous materials and the conditions under which these grades operate, frequently involving shocks from interrupted cutting, it is advisable to strengthen the tool system as much as possible and use dimpled inserts where possible.



Dimple Clamps for Added Stability

Typical Application

Continuous cost pressures force manufacturers of gray cast iron brake disks to look for cost-cutting solutions. CBN inserts deliver high productivity and long tool life. Kennametal has developed the solid, high-content grade KB1340™, which provides superior performance when machining gray cast iron components, such as brake disks or fly wheels. To ensure secure seating in the toolholder, the inserts are available with dimple-design clamping. The clamps fit Ceramtec holders, which makes the conversion to Kennametal tooling easier.



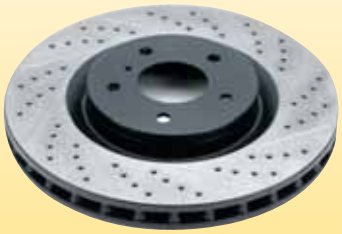
Higher Productivity and Profitability

- Ensures tight and rigid clamping.
- Dimpled insert with special clamping provides increased stability in the pocket.
- Ideal for use in heavy-duty machining applications.
- Cladded clamps for improved resistance against chip wash are available upon request.
- The shallow dimple design enables the use of less expensive 3/16" (4,76mm) inserts.
- Round dimple design works with custom tooling where clamping direction must be offset due to space limitations.

Featured Applications: Brake Disk Machining

Proven solutions

Workpiece: Brake disk
Material: GGG 60



	Competitor CBN	Kennametal KB1340
Insert:	N/A	SNMN120416502020
vc:	1100 m/min (3600 SFM)	1100 m/min (3600 SFM)
f:	0,4 mm/rev (.016 in/rev)	0,4 mm/rev (.016 in/rev)
ap:	2mm (.079")	2mm (.079")
Performance:	1500 pieces	1700 pieces

	Competitor Ceramic	Kennametal CBN KB1340
Insert:	N/A	CNGX433S0415FW
vc:	800 m/min (2600 SFM)	1500 m/min (5000 SFM)
f:	0,5 mm/rev (.02 in/rev)	0,5 mm/rev (.02 in/rev)
ap:	1,5mm (.059")	1,5mm (.059")
Performance:	120 pieces	4200 pieces

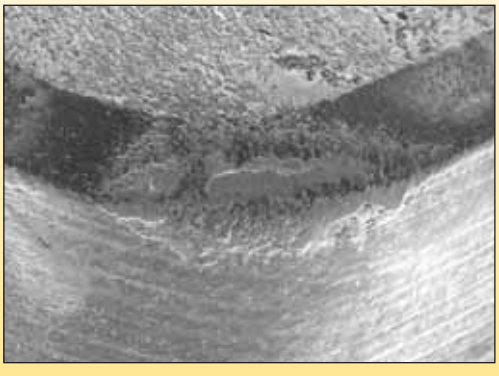
Clamp selection chart

insert		clamp	
ANSI catalog number	ISO catalog number	catalog number	MM
CNGX433S0415	CNGX120412S01015	551.718 - 100° Corner	3968904
CNGX433S0415FW	CNGX120412S01015FW	551.718 - 100° Corner	3968904
CNGX434S0820	CNGX120416S02020	551.718 - 100° Corner	3968904
CNGF432	CNGF120408	551.718 - 100° Corner	3968904
DNGX434S0820	DNGX150416S02020	551.720	4094234
SNGX434S0820	SNGX120416S02020	551.718	3968904
SNGX534S0820	SNGX150416S02020	551.718	3968904
VNGX333S0820	VNGX160412S02020	551.721	4094236
TNGX333EFW	TNGX160412EFW	551.733	4094235

Application recommendation

vc: 800–1500 m/min

Certain melts of gray cast iron can exhibit poor machinability — by as much as two orders of magnitude — **related to either insufficient aging or composition.**

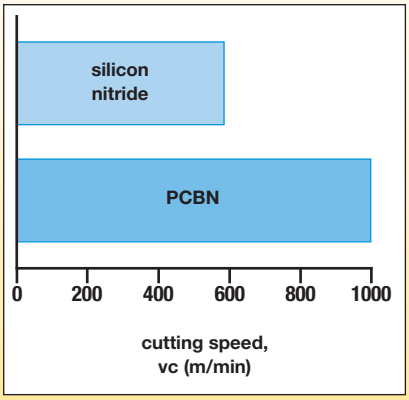


Good GG25 (0.05 S)
62 km sliding distance @ 1500 m/min

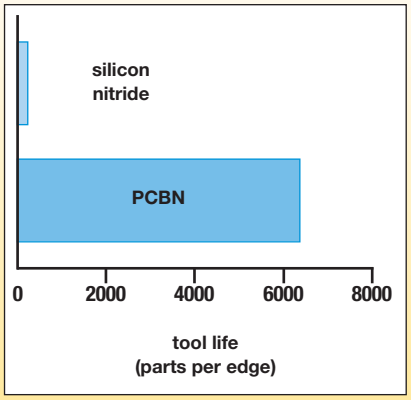
Gray cast iron brake disk machining • Ceramic vs. PCBN



(a)



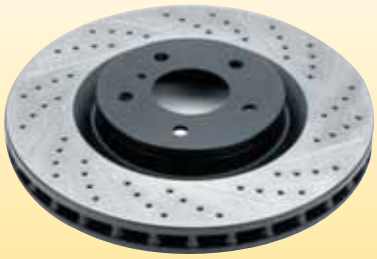
(b)



(c)

PCBN increases productivity when machining gray iron brake disks (a) in terms of cutting speed (b) and tool life (c) compared to silicon nitride ceramic.

Brake disk machining example

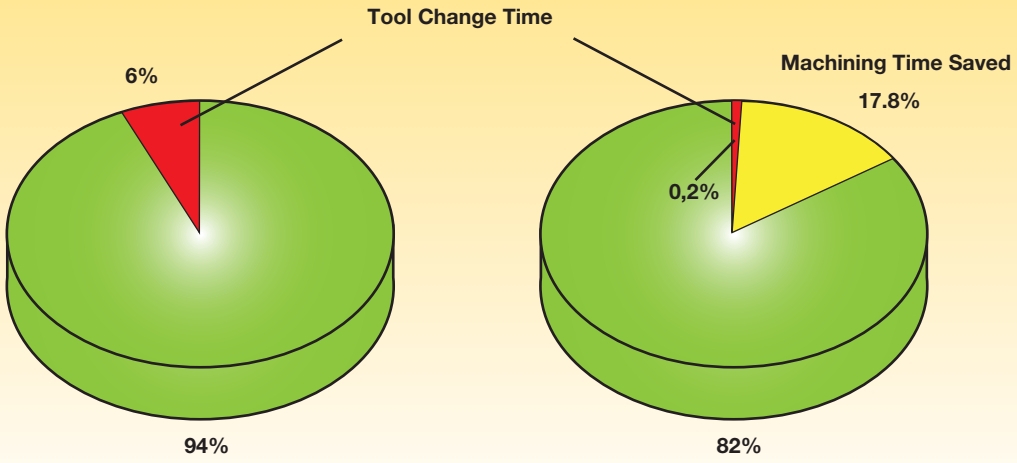


Optimized Process

Tool Material: PCBN
Tool Life: 2000 brake disks

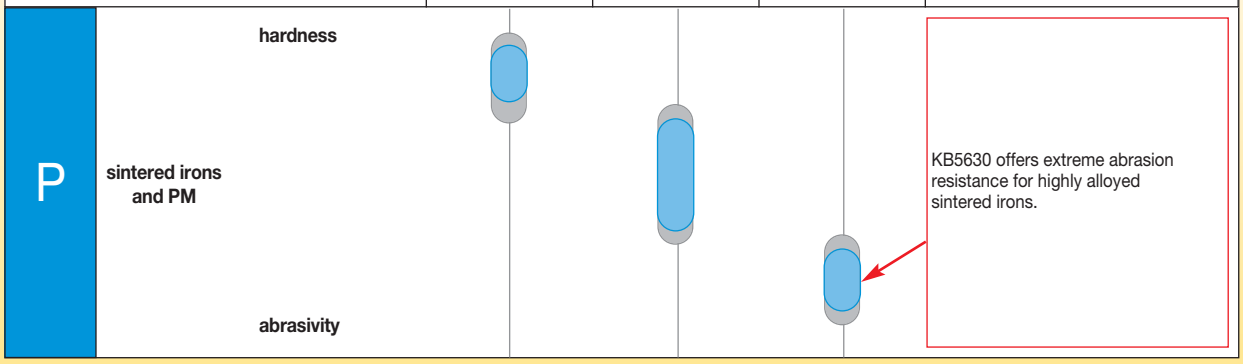
Starting Situation

Tool Material: black ceramic
Tool Life: 40 brake disks

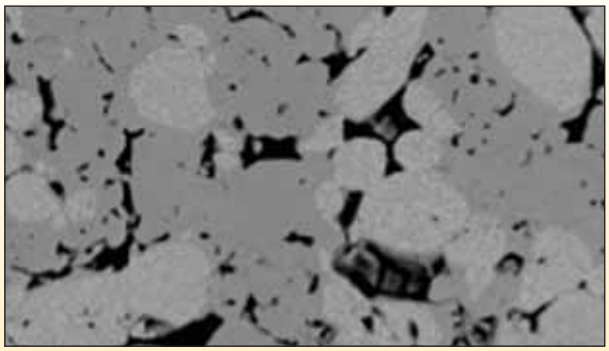


PCBN portfolio

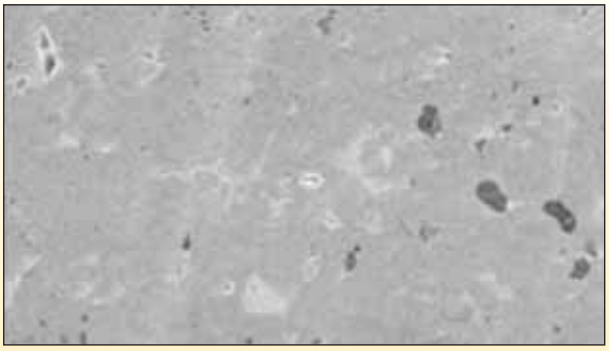
Grade	KB5610	KB5625	KB5630	Grade
CBN%	50	65	90	CBN%



PM machining • Inlet/outlet valve



50 µm



50 µm

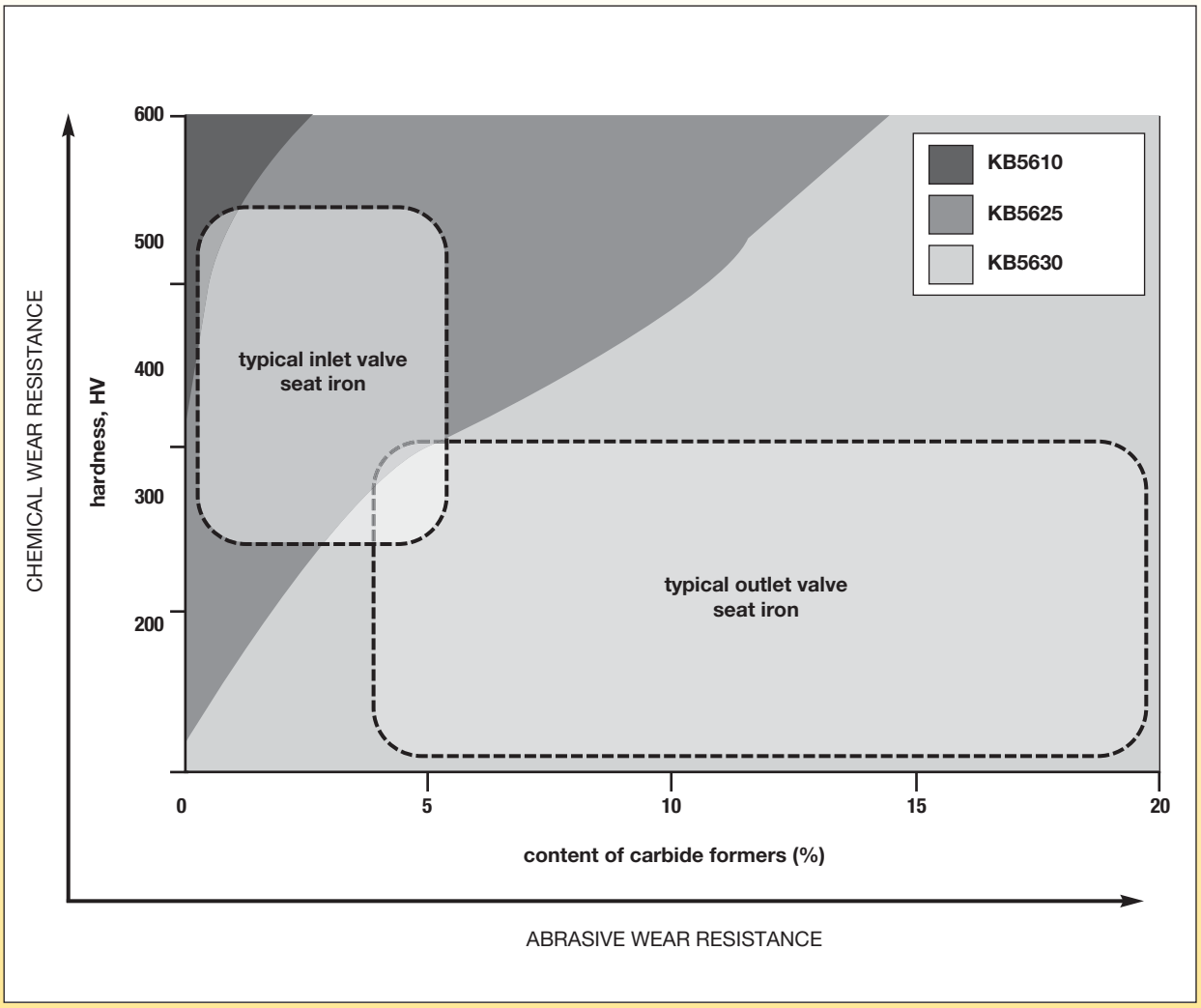
Exhaust

- Abrasive with hard particle content:
  - Martensite — 800 HK
  - WMoC — 1600 HK
  - VC — 2800 HK
- High porosity/Cu infiltrated.
- Co increases hot hardness.
- Macro-hardness <400 HV (<41 HRC).
- Derives wear resistance from hard particles.

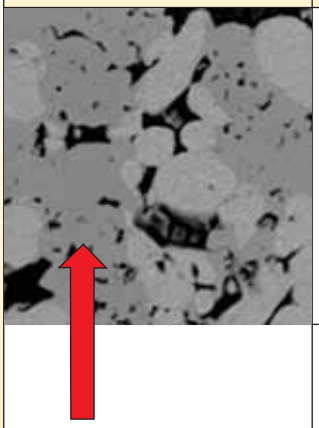
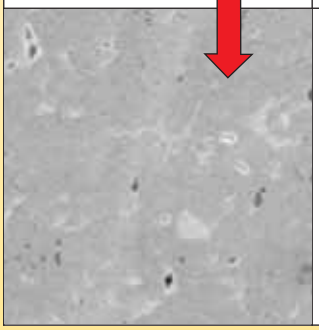
Intake

- Principally, structure is hard steel.
- Minimal porosity on well sintered.
- Low/medium alloy content.
- Macro-hardness >400 HV (>41 HRC).
- Derives wear resistance from hardened matrix structure.

PCBN grade selection for valve seat machining



PCBN grade selection for valve seat machining

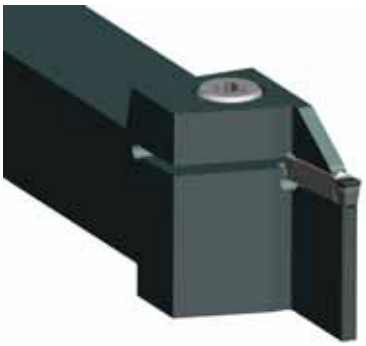
	material to be machined	short engagement (e.g., plunging)	long engagement (e.g., generating)
	Soft matrix (≤300 HV), hard carbides, high porosity	1. Abrasion resistance 2. Strength **#1 Choice: KB5630™**	1. Abrasion resistance 2. Strength 3. Chemical wear resistance **#1 Choice: KB5630**
Highly Abrasive High Hardness	Both material types with single insert	1. Abrasion resistance 2. Chemical wear resistance 3. Strength **#1 Choice: KB5630** #2 Choice: KB5625™	1. Abrasion and chemical wear resistance 2. Strength **#1 Choice: KB5625** #2 Choice: KB5630
	Hard matrix (≥400 HV), few carbides, low porosity	1. Chemical wear resistance 2. Strength 3. Abrasion resistance **#1 Choice: KB5625** #2 Choice: KB5610™	1. Chemical wear resistance 2. Abrasion resistance 3. Strength **#1 Choice: KB5625** #2 Choice: KB5610



A4™ Grooving and Turning System

- One tool for turning, facing, grooving, and face grooving in O.D. and I.D. applications — that means exceptionally fast cycle times and 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!

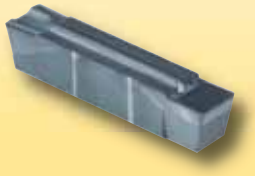
Clamping Design



Applications

Test result • A4

Tool: A4R0400M04800E KB1630
Material: INCONEL® 718
Diameter: 983mm



Cutting Data	Competitor	Kennametal
Speed:	180 m/min (600 SFM)	180 m/min (600 SFM)
Feed:	0,3mm/rev (.0051 in/rev)	0,3mm/rev (.0051 in/rev)
DOC:	8mm (.31")	8mm (.31")
Diameter:	30mm (1.18")	30mm (1.18")
Performance:	70–140 pieces	160–200 pieces



Top Notch™ Grooving System

Our rigid clamping design prevents insert movement. 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.

Clamping Design



Applications

Test result • Top Notch

Tool: WSP 4121129 Top Notch KB5625
Material: DIN 16MnCr5/AISI 5115, 59–63 HRC
Machine: Hard/soft machining



Cutting Data	Competitor	Kennametal
Speed:	160 m/min (530 SFM)	160 m/min (530 SFM)
Feed:	0,06 mm/rev (.0024 in/rev)	0,06 mm/rev (.0024 in/rev)
DOC:	2mm (.079")	2mm (.079")
Diameter:	39,5mm (1.56")	39,5mm (1.56")
Performance:	70 pieces	90 pieces

Quick Optimization Guide: Troubleshooting for Catastrophic Failure

Tool Failure Criteria



Example of catastrophic failure

Catastrophic Failure (loss of cutting edge)

Spalling on Rake Face

Chipping on Flank Face

Preceded by Extensive Crater Wear



Example of crater wear

Yes

No

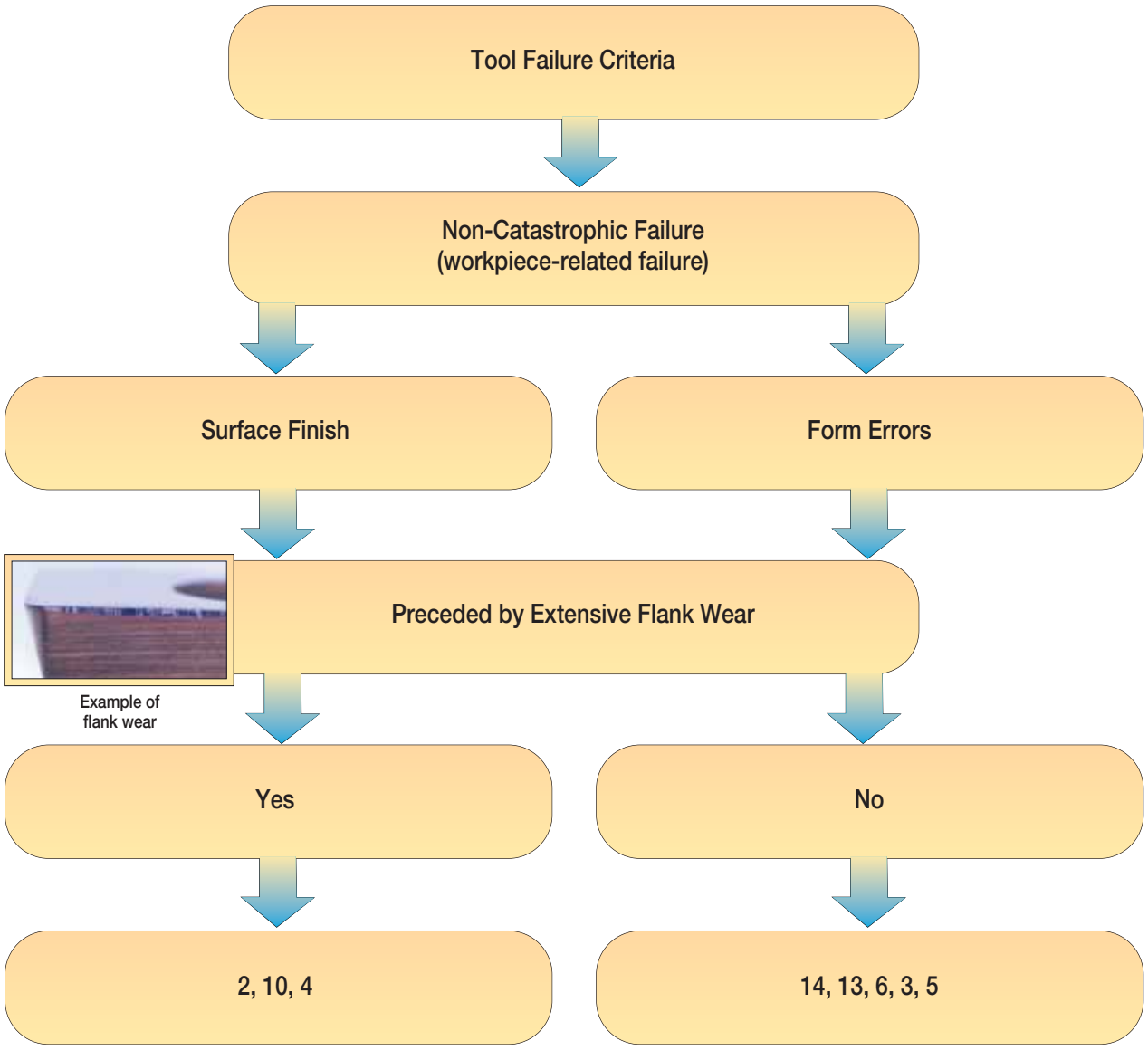
1, 4, 12, 3

3, 8, 7, 12, 11, 14, 5

Remedial Action

1. Select more inert PCBN grade.
2. Select more abrasion-resistant PCBN grade.
3. Select stronger PCBN grade.
4. Reduce cutting speed.
5. Increase cutting speed.
6. Reduce nose radius.
7. Increase nose radius.
8. Increase chamfer angle.
9. Decrease chamfer angle.
10. Increase clearance angle.
11. Reduce clearance angle.
12. Increase edge hone dimension.
13. Reduce edge hone dimension.
14. Reduce feed and/or depth of cut.
15. Increase feed and/or depth of cut.

Quick Optimization Guide: Troubleshooting for Non-Catastrophic Failure



Remedial Action

1. Select more inert PCBN grade.
2. Select more abrasion-resistant PCBN grade.
3. Select stronger PCBN grade.
4. Reduce cutting speed.
5. Increase cutting speed.
6. Reduce nose radius.
7. Increase nose radius.
8. Increase chamfer angle.
9. Decrease chamfer angle.
10. Increase clearance angle.
11. Reduce clearance angle.
12. Increase edge hone dimension.
13. Reduce edge hone dimension.
14. Reduce feed and/or depth of cut.
15. Increase feed and/or depth of cut.



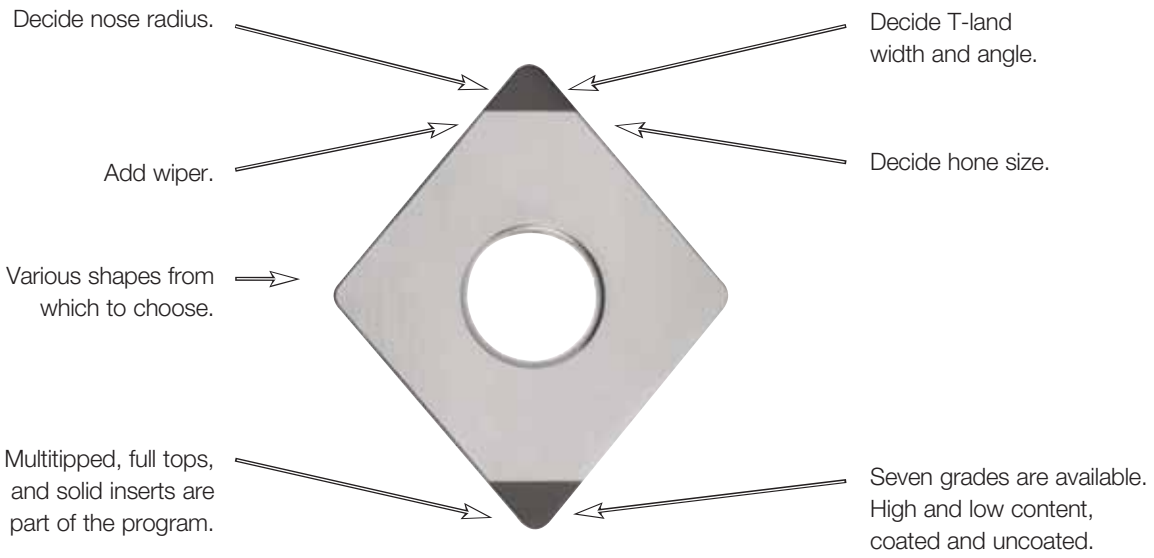
Quick-Turn Solutions Program for CBN Inserts

Standard inserts incorporate latest grade, coating, edge preparation, and manufacturing technology. They cover a wide range of applications and provide superior performance.

However, in some cases, further fine tuning is needed to reach the optimum performance point. Therefore, Kennametal has set up the Quick-Turn Solutions Program (QTSP) to allow edge preparation modifications on selected styles, grades, and formats to further enhance the tool performance.



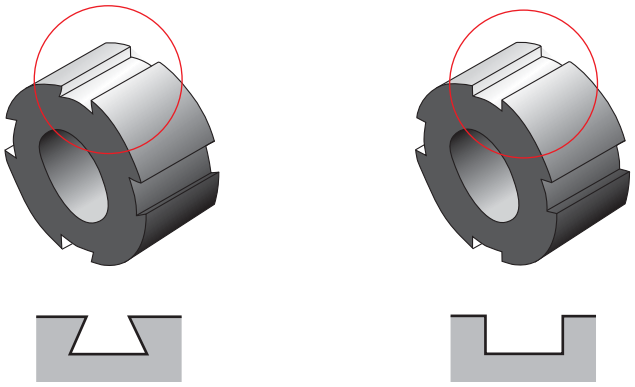
Technical Details • Options for a Customization



For more information, please contact a Kennametal Sales Representative, Authorized Kennametal Distributor, or visit www.kennametal.com.

Teardrop (TD Edges) for Demanding Applications

Teardrop (TD) edges are advanced edge preparations used in heavily interrupted operations where standard edge preps fail. They can be ordered as specials.

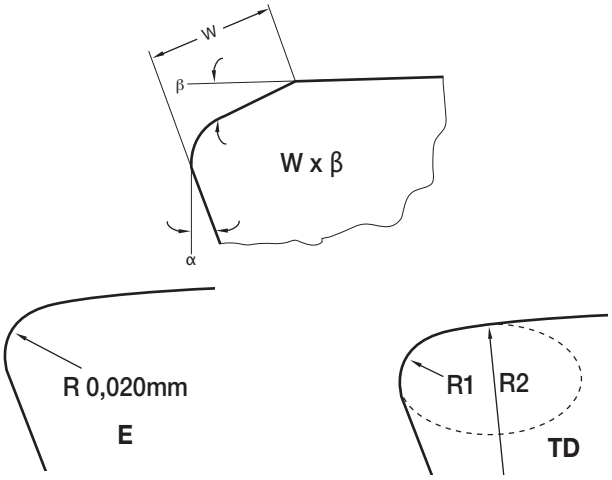


Possible TD Edges

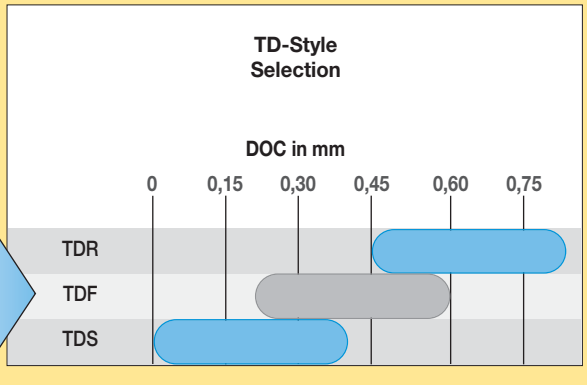
W – Edge Prep Width

α – Clearance Angle

β – Edge Prep Angle – between rake face and K-land



Edge Preparation Specifications		
E	hone only	0,020mm
W x β	width in 0,001mm x angle	
TDR	ellipse based on 0,25 x 30°	
TDF	ellipse based on 0,20 x 20°	
TDS	ellipse based on 0,10 x 20°	



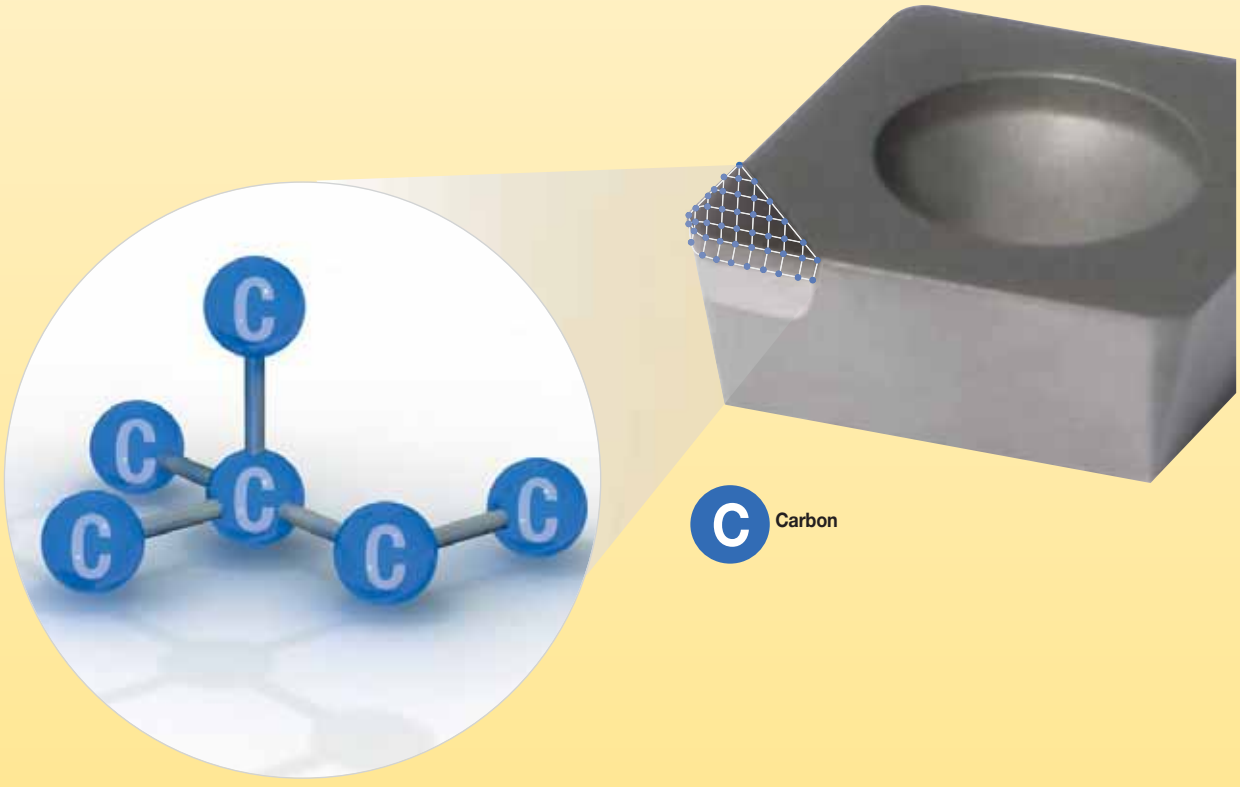


PCD

The current global metalcutting climate has put increased focus on high productivity and cost reductions coming from cutting tools. These requirements lead to the rapid growth and implementation of cutting tools using superhard materials. As the name implies, these materials have a significant advantage in hardness over conventional tool materials, which from the end user point of view, translates into increased productivity (higher cutting speeds, longer tool life, etc.), lower tooling cost per part, and also, the ability to process materials previously un-machinable with conventional tooling.

The most widely known superhard materials are diamond and cubic boron nitride. Our industry uses the polycrystalline forms of these materials, i.e., polycrystalline diamond (PCD) and polycrystalline boron nitride (PCBN). PCD tooling is mainly targeted at the machining of non-ferrous materials (e.g., aluminum alloys, plastics, CFRPs, composites, titanium alloys, ceramics, carbides, etc.) whereas PCBN targets iron-based alloys (e.g., cast irons, hard steels, iron-based composites, etc.)

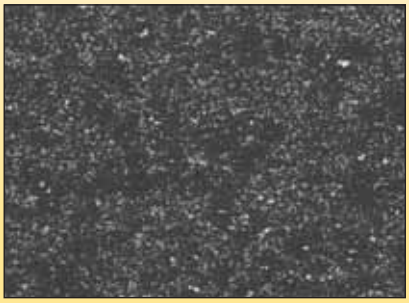
Kennametal is at the forefront of developing and implementing superhard materials in our standard and special tooling solutions across all our product lines. Kennametal's approach to superhard tooling starts with customer needs and constraints. We then use fundamental research to develop the best superhard solutions that would make available the best value for the customer and respond to their specific demands.



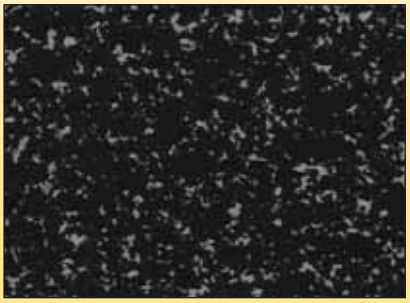
Different kinds of PCD grades

Application demands determine the choice of cutting tool material. The important requirements of the material are:

- Abrasion resistance.
- Toughness and strength.
- Thermal behavior.



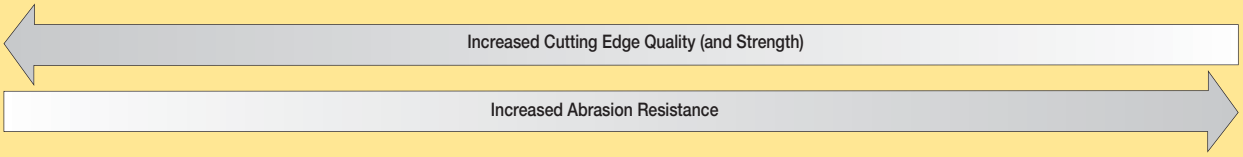
Fine Grain



Medium Grain



Coarse Grain



Comparison of different PCD grades

Behavior in Applications

grade characteristics:	KD1400™	fine grain	medium grain
grain size:	0,5–1 µm	2 µm	10 µm
chip resistance:	●●●●●●●●●●	●●●●●●●●●○	●●●●●●●●○○
abrasion resistance:	●●●●●○○○○○	●●●○○○○○○○	●●●●●○○○○○

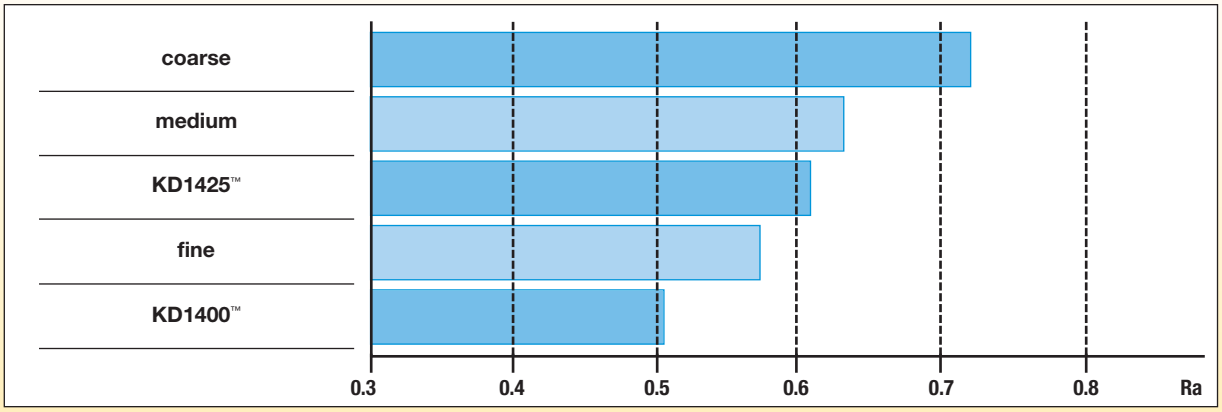
Behavior in Applications

grade characteristics:	coarse grain	KD1425™	KD1405™
grain size:	25 µm	2–30 µm	0 µm
chip resistance:	●●●●●●●○○○	●●●●●●○○○○	●●●●●●●○○○
abrasion resistance:	●●●●●●●○○○	●●●●●●●●●○	●●●●●●●●●●

Chipping can be defined as the formation of small notches on the cutting edge and generally occurs when the load at the cutting edge exceeds the strength of the material. An A390 alloy was used in edge milling tests to assess the chip resistance of the different PCD grades.

Abrasion is characterized by the development of grooves and ridges on the flank of the tool in the direction of sliding. The abrasion resistance of PCD was evaluated on a high silicon aluminum alloy, A390, in a continuous cutting operation.

PCD grain size • Workpiece surface finish

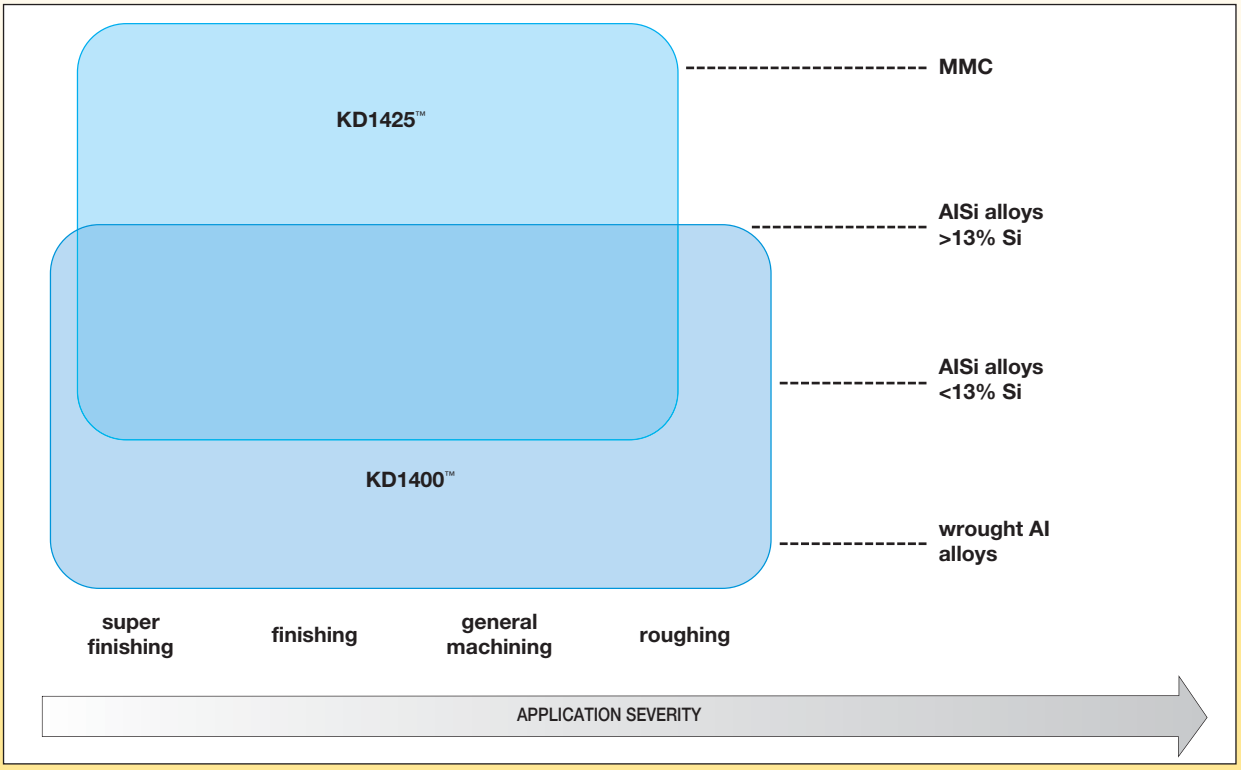


This chart illustrates the influence of the PCD grain size on surface finish in turning 18% silicon aluminum alloys. The best finish is obtained with the submicron grade KD1400. While the grade KD1425 contains grains as large as 30 microns, this material's unique multimodal grain size distribution results in a microstructure of closely packed diamond grains resulting in a smoother ground edge.

KD1400 advantages at a glance • Summary

A sharper cutting edge	• Clean cuts on carbon fibers. • Permits larger nose radii for increased feed and productivity without loss in finish.
A less serrated (smoother) cutting edge	• Improved surface finish — potentially reducing rough and intermediate honing.
Permits a more positive rake	• Reduced cutting forces, delamination, and burr formation.
Permits increased clearance	• Providing for lower tool wear rates and lower push-off forces — thereby improving process capability.
Provides unparalleled chip resistance	• Suitable for heavy milling and interrupted turning with positive edge geometries and longest tool life.
Comparable abrasion resistance to a coarse grade PCD	• Covers the widest range of applications with a single grade — reduce inventory and complexity.

PCD grades application/workpiece material



PCD application areas and parameter range

material machined	operation	PCD grade	speed				feed rate				DOC			
			m/min		SFM		mm/rev		in/rev		mm		in	
			min	max	min	max	min	max	min	max	min	max	min	max
aluminum alloy	turning	KD1400	1000	4000	3300	13200	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
4–8% Si	milling		2000	5000	6600	16500	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
9–12% Si	turning		700	3000	2310	9900	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
>13 Si	milling	KD1400/KD1425	1000	3000	3300	9900	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
	turning	KD1425	300	1000	990	3300	0,1	0,4	0,004	0,016	0,1	4,0	0,004	0,157
	milling	KD1400	500	1500	1650	4950	0,1	0,3	0,004	0,012	0,1	0,3	0,004	0,012
cast iron	roughing	KD1425	50	300	165	990	0,2	0,5	0,008	0,020	0,5	3,0	0,020	0,118
CGI/NCI	finishing		50	400	165	1320	0,1	0,3	0,004	0,012	–	0,5	–	0,020
MMC	turning/milling		300	700	990	2310	0,1	0,4	0,004	0,016	0,2	1,5	0,008	0,059
20% Sic/Al														
copper alloys	turning/milling	KD1400	400	1300	1320	4290	0,03	0,3	0,001	0,012	0,05	2,0	0,002	0,079
copper, zinc, bass														
tungsten carbide <16% Co	turning	KD1425	30	120	99	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
unsintered (green)			20	60	66	198	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
sintered	–	–	–	–	–	–	–	–	–	–	–	–	–	–
ceramics	turning	KD1425	70	120	231	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
unsintered			50	100	165	330	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
sintered	–	–	–	–	–	–	–	–	–	–	–	–	–	–
plastics/composites	turning/milling	KD1400/KD1425	300	990	990	8250	0,05	0,3	0,002	0,012	0,2	3,0	0,004	0,118
carbon/graphite			200	660	660	3300	0,05	0,5	0,002	0,020	0,1	3,0	0,004	0,118

PCD tool failure modes

The gradual wear observed on diamond cutting tools can be divided into:

- Mechanically activated wear (abrasion, adhesion, and wear by microfracture).
- Tribochemical wear (dissolution/diffusion wear and formation of new chemical compounds).

Abrasion

The primary mode of mechanically activated wear for diamond cutting tools is abrasion, which is the removal of tool material by a scoring action of protruding asperities and hard phase inclusions in the workpiece and chip (e.g., silicon grains in aluminum-silicon alloys).

Abrasion is characterized by the development of grooves and ridges in the direction of the tool sliding against a newly machined surface of the workpiece or chip sliding against the rake face.

The severity of abrasion can be increased in cases where the workpiece material contains hard inclusions or when there is hard wear debris from the workpiece or the tool at the interface.

Tribochemical

Tribochemical wear is particularly relevant in the machining of titanium alloys when the carbon in the tool material diffuses into the adhered titanium layer to form a TiC boundary layer on the rake face of the tool.

This boundary quickly becomes saturated with tool constituents and can then act as a protective barrier against any further diffusion.

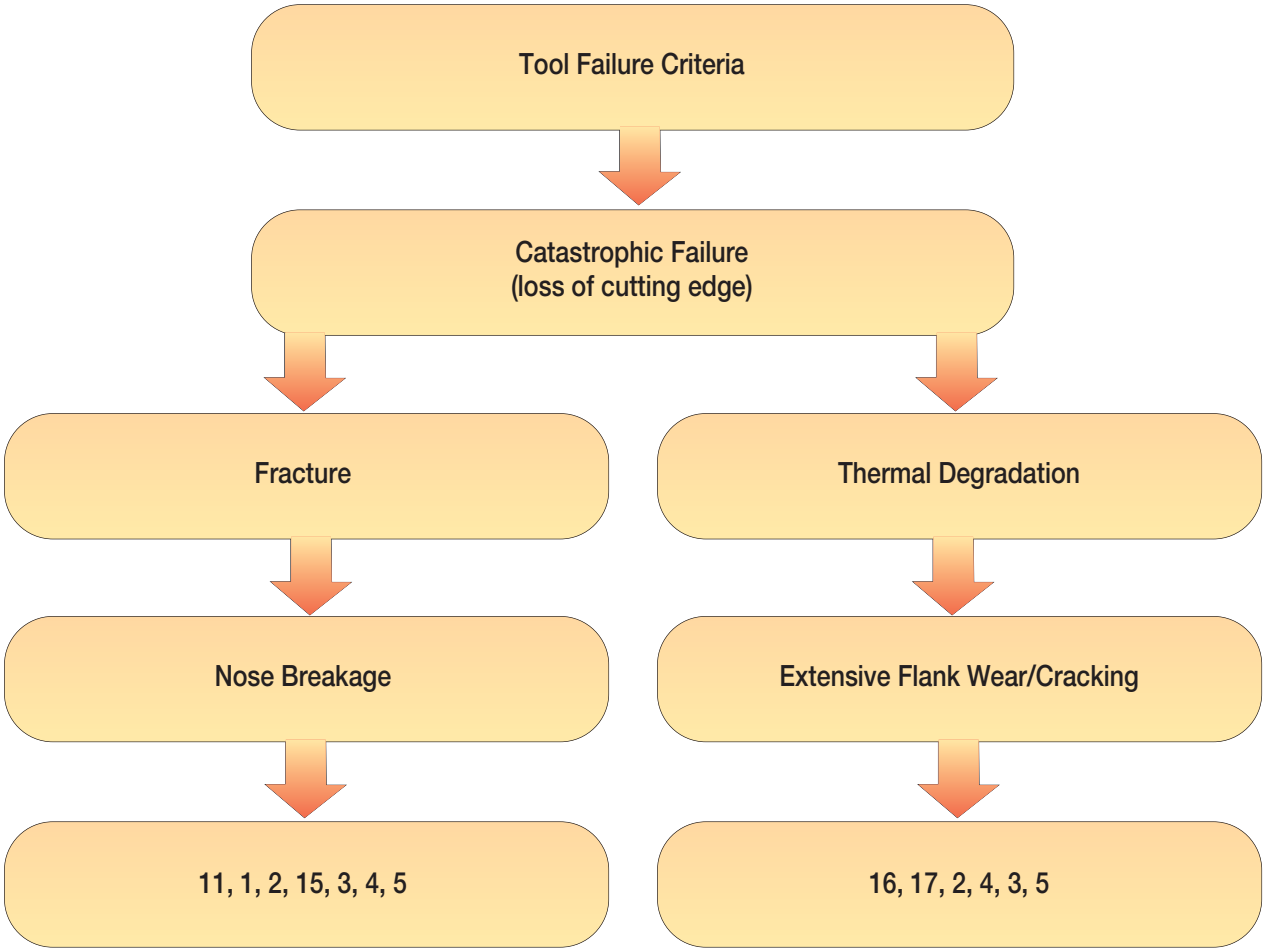
Attrition

When two surfaces slide over each other, particularly in the absence of a lubricant, some adhesion can occur at the points of contact. Adhesive wear (often called attrition) in cutting tools involves the mechanism in which individual grains or small grain aggregates are pulled out of the tool surfaces and are carried away at the underside of the chip or are torn away by the adherent workpiece. The term “plucking” is also used to describe the loss of tool particles from the edge or faces. For example, when the forces are high enough, the TiC boundary layer that forms in titanium machining can be removed from the rake face of the tool transporting with it a pulled-out diamond grain, to form a crater. Once this crater becomes excessive, fracture of the tool could occur due to the geometrical weakening of the edge. Negative geometries tend to enhance the possibility of adhesive wear and built-up edge formation. Subsequent break-up (fracture) of the adhesive tool/workpiece joints results in attrition wear. The wear scars produced by attrition are rough, as opposed to the usually smooth wear surfaces generated by tribochemical wear.

Microfracture

When cutting tools are employed for continuous machining of high hardness materials or interrupted machining, small fractures can appear on the cutting edge. If fracturing is small, the cutting tool can usually still be used. Wear by microfracture involves a less severe form of fracture and includes chipping, spalling, and cracking whereby the cutting tool can be reused.

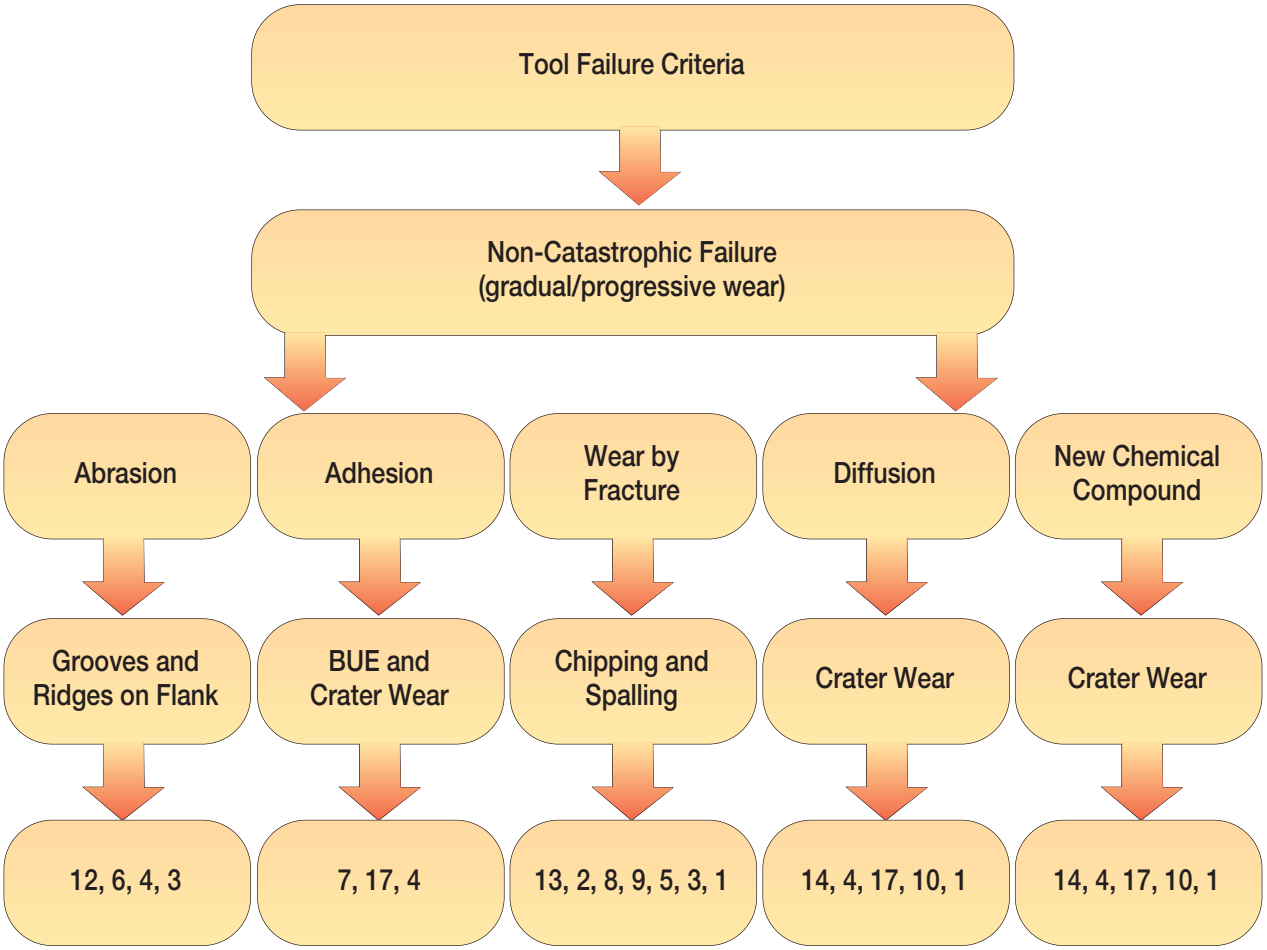
Tool Failure and Wear:



Remedial Action

1. Increase nose radius.
2. Reduced clearance angle.
3. Reduce feed.
4. Reduce cutting speed.
5. Reduce DOC.
6. Increase clearance angle.
7. Use a positive rake angle.
8. Add a small edge hone.
9. Use neutral rake angle.
10. Increase lead angle.
11. Select a tougher grade.
12. Select more abrasion-resistant grade.
13. Select a higher TRS grade.
14. Choose a more chemically inert grade.
15. Increase thickness.
16. Select a more thermally stable grade.
17. Use coolant.

Tool Failure and Wear:



Remedial Action

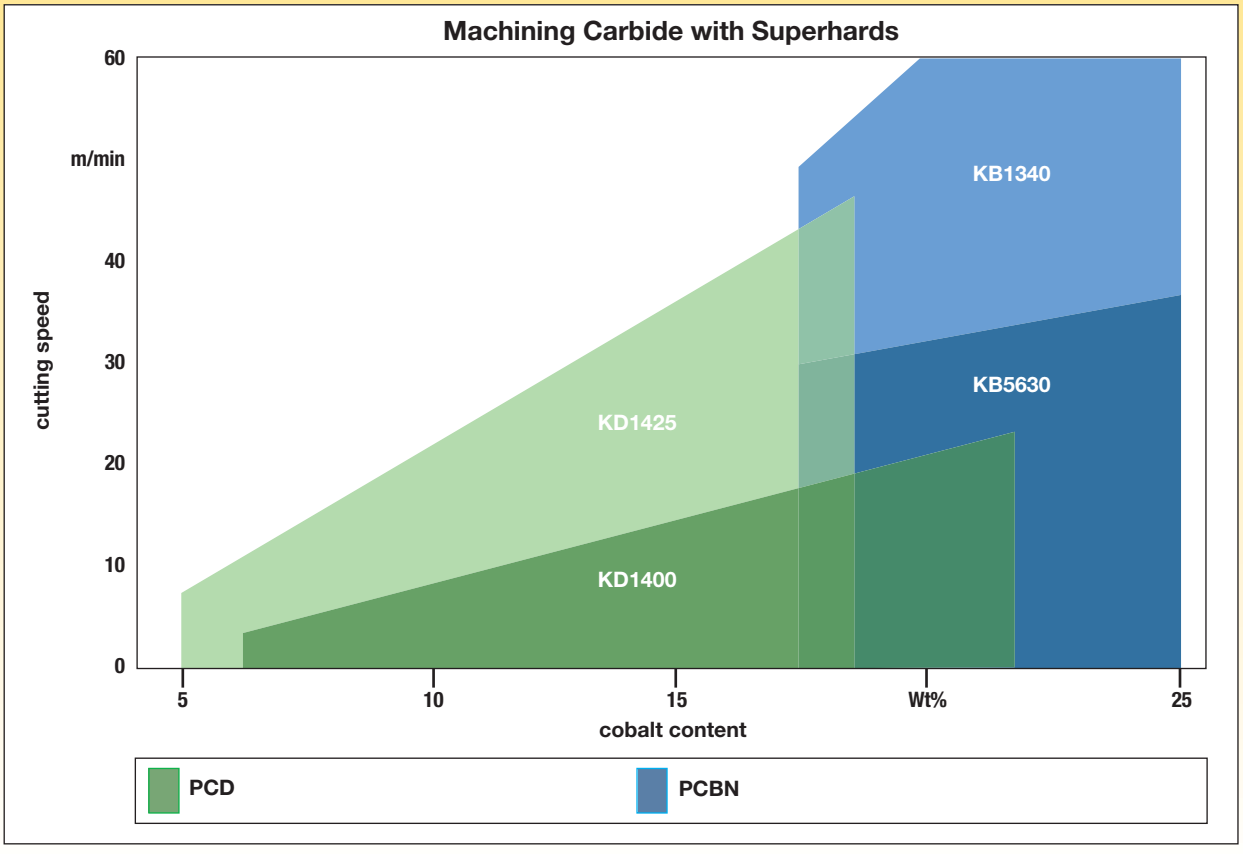
1. Increase nose radius.
2. Reduced clearance angle.
3. Reduce feed.
4. Reduce cutting speed.
5. Reduce DOC.
6. Increase clearance angle.
7. Use a positive rake angle.
8. Add a small edge hone.
9. Use neutral rake angle.
10. Increase lead angle.
11. Select a tougher grade.
12. Select more abrasion-resistant grade.
13. Select a higher TRS grade.
14. Choose a more chemically inert grade.
15. Increase thickness.
16. Select a more thermally stable grade.
17. Use coolant.

Machining of carbides with superhards

material machined	operation	PCD grade	speed				feed rate				DOC			
			m/min		SFM		mm/rev		in/rev		mm		in	
			min	max	min	max	min	max	min	max	min	max	min	max
tungsten carbide <19% Co														
unsintered (green)	turning	KD1425	30	120	99	396	0,1	0,4	0,004	0,016	0,2	1,0	0,008	0,039
sintered	turning	KD1425	20	80	66	264	0,1	0,25	0,004	0,010	0,1	0,5	0,004	0,020
tungsten carbide >19% Co														
unsintered (green)	turning	KB1340	50	150	165	495	0,1	0,5	0,004	0,020	0,2	1,0	0,008	0,039
sintered	turning	KB1340	30	100	99	330	0,1	0,4	0,004	0,016	0,1	0,5	0,004	0,020

Application Notes

- PCD tools should be used with a neutral geometry and 7° clearance.
- PCD edge preparation should be either F or E. An E edge preparation is preferred for larger DOCs, low Co content, and interrupted machining.
- PCBN tools should be used in a negative geometry with 5° to 7° negative rake.
- PCBN edge preparation should be either E or S01025.
- Coolant application is recommended and very important, especially with PCD application where failure is determined by heat generation.
- PCD can also be applied for Co concentrations higher than 19% as long as minimal heat is generated.



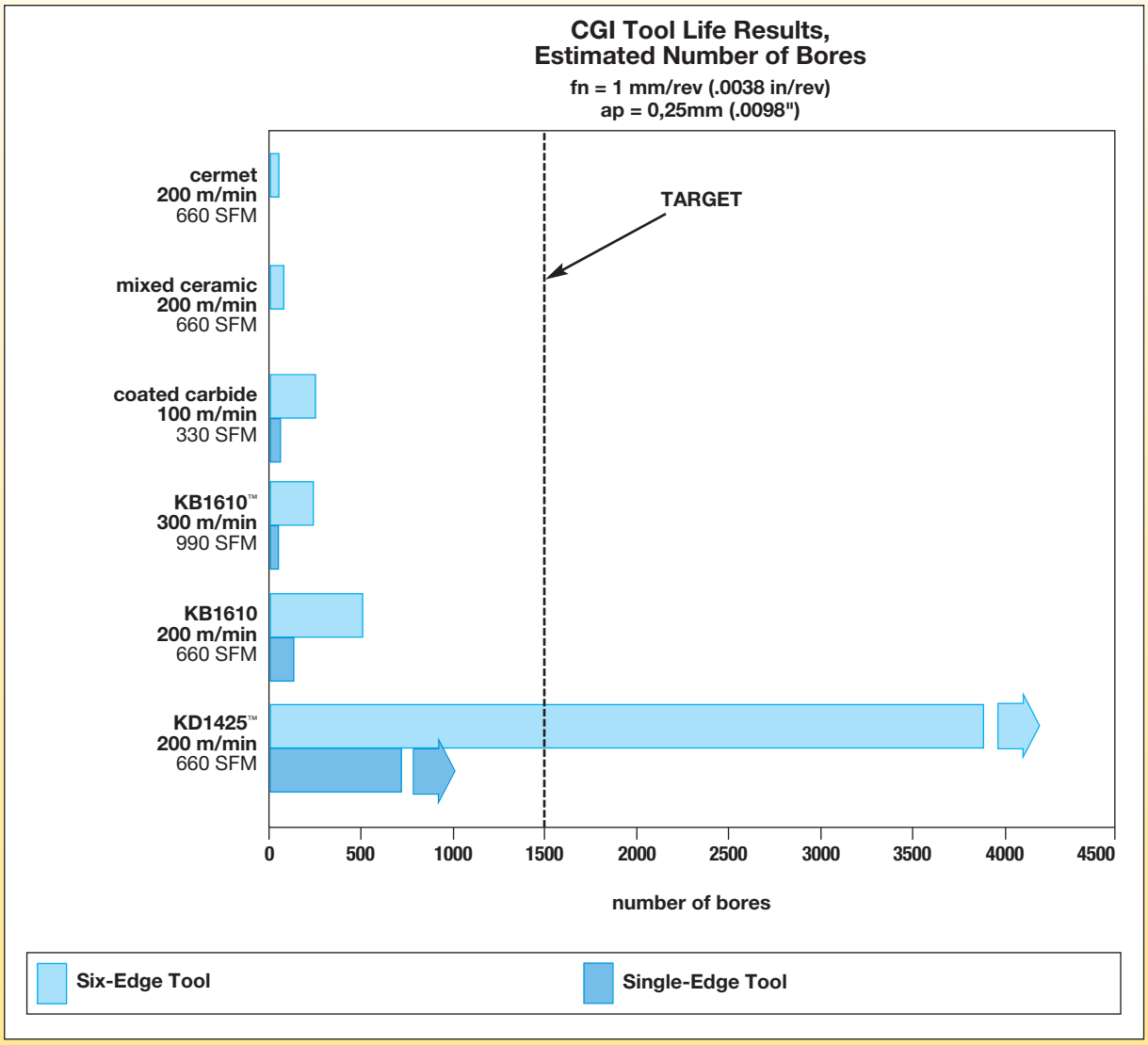
CGI boring with turning insert

Machining Parameters

- Feed = 0,1mm (.0038")
- Depth of cut = 0,25mm (.0098")

Tool Life Criteria

- VB max = 0,3mm (.0098")
- Number of bores = 1500

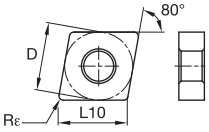


● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

CNGA

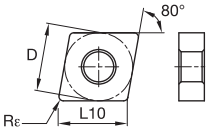




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGA120404E	CNGA431E	12,70	1/2	12,90	.508	0,4	1/64
CNGA120408E	CNGA432E	12,70	1/2	12,90	.508	0,8	1/32

CNGA-EMT

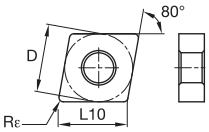




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGA120408EMT	CNGA432EMT	12,70	1/2	12,90	.508	0,8	1/32
CNGA120412EMT	CNGA433EMT	12,70	1/2	12,90	.508	1,2	3/64

CNGA-FST

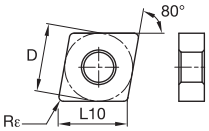




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGA120404FST	CNGA431FST	12,70	1/2	12,90	.508	0,4	1/64
CNGA120408FST	CNGA432FST	12,70	1/2	12,90	.508	0,8	1/32

CNGA-FW/MW MT





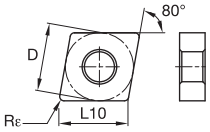
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGA120404S01025FWMT	CNGA431S0425FWMT	12,70	1/2	12,90	.508	0,4	1/64
CNGA120404EFWMT	CNGA431EFWMT	12,70	1/2	12,90	.508	0,4	1/64
CNGA120408EFWMT	CNGA432EFWMT	12,70	1/2	12,90	.508	0,8	1/32
CNGA120408S01025FWMT	CNGA432S0425FWMT	12,70	1/2	12,90	.508	0,8	1/32
CNGA120412EFWMT	CNGA433EFWMT	12,70	1/2	12,90	.508	1,2	3/64
CNGA120416S02015MWMT	CNGA434S0815MWMT	12,70	1/2	12,90	.508	1,6	1/16

● first choice
○ alternate choice

P												
M												
K	●	●										
N			●	○	●							
S				●				○				○
H	○					●	●	●	●	●	●	●

CNGA-MT

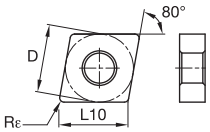




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CNGA120404S01025MT	CNGA431S0425MT	12,70	1/2	12,90	.508	0,4	1/64						●	●	●	●	●	●
CNGA120408S01020MT	CNGA432S0420MT	12,70	1/2	12,90	.508	0,8	1/32		●									
CNGA120408S02020MT	CNGA432S0820MT	12,70	1/2	12,90	.508	0,8	1/32		●									
CNGA120408S01025MT	CNGA432S0425MT	12,70	1/2	12,90	.508	0,8	1/32						●	●	●	●	●	●
CNGA120412S01025MT	CNGA433S0425MT	12,70	1/2	12,90	.508	1,2	3/64						●	●		●	●	●
CNGA120412S01020MT	CNGA433S0420MT	12,70	1/2	12,90	.508	1,2	3/64											●
CNGA120412T02020MT	CNGA433T0820MT	12,70	1/2	12,90	.508	1,2	3/64		●									
CNGA120416S01020MT	CNGA434S0420MT	12,70	1/2	12,90	.508	1,6	1/16		●									

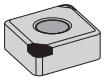
CNGA-ST

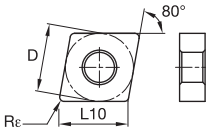




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CNGA120404S01025ST	CNGA431S0425ST	12,70	1/2	12,90	.508	0,4	1/64							●				
CNGA120408S01025ST	CNGA432S0425ST	12,70	1/2	12,90	.508	0,8	1/32							●				
CNGA120412S01025ST	CNGA433S0425ST	12,70	1/2	12,90	.508	1,2	3/64							●				

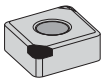
CNGM-CB1

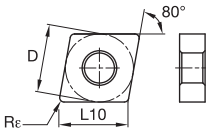




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CNGM120404S01325MTCB1	CNGM431S0525MTCB1	12,70	1/2	12,90	.508	0,4	1/64										●	
CNGM120408S01325MTCB1	CNGM432S0525MTCB1	12,70	1/2	12,90	.508	0,8	1/32										●	
CNGM120412S01325MTCB1	CNGM433S0525MTCB1	12,70	1/2	12,90	.508	1,2	3/64										●	

CNGM-CB2





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
CNGM120404S01325MTCB2	CNGM431S0525MTCB2	12,70	1/2	12,90	.508	0,4	1/64									●		
CNGM120408S01325MTCB2	CNGM432S0525MTCB2	12,70	1/2	12,90	.508	0,8	1/32									●		
CNGM120412S01325MTCB2	CNGM433S0525MTCB2	12,70	1/2	12,90	.508	1,2	3/64									●		


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23

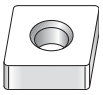

B24–B31

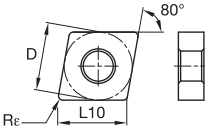

B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

CNMA

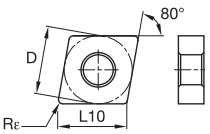




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMA120408S01025	CNMA432S0425	12,70	1/2	12,90	.508	0,8	1/32
CNMA120408S02020	CNMA432S0820	12,70	1/2	12,90	.508	0,8	1/32
CNMA120412S02020	CNMA433S0820	12,70	1/2	12,90	.508	1,2	3/64

CNMS-E

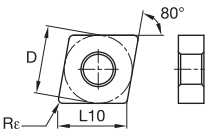




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMS120408E	CNMS432E	12,70	1/2	12,90	.508	0,8	1/32

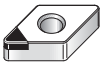
CNMS-FST

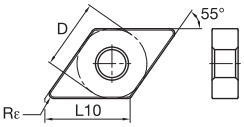




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMS120404FST	CNMS431FST	12,70	1/2	12,90	.508	0,4	1/64
CNMS120408FST	CNMS432FST	12,70	1/2	12,90	.508	0,8	1/32

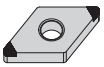
DNGA

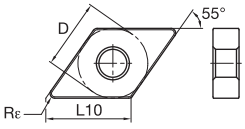




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGA150404E	DNGA431E	12,70	1/2	15,50	.610	0,4	1/64
DNGA150408E	DNGA432E	12,70	1/2	15,50	.610	0,8	1/32

DNGA-EMT



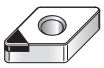


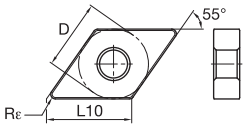
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGA150408EMT	DNGA432EMT	12,70	1/2	15,50	.610	0,8	1/32
DNGA150412EMT	DNGA433EMT	12,70	1/2	15,50	.610	1,2	3/64

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

DNGA-FST

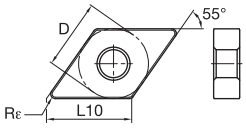




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGA150404FST	DNGA431FST	12,70	1/2	15,50	.610	0,4	1/64
DNGA150408FST	DNGA432FST	12,70	1/2	15,50	.610	0,8	1/32

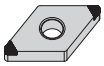
DNGA-FW/MW MT

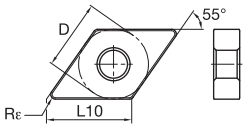




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGA150404EFWMT	DNGA431EFWMT	12,70	1/2	15,50	.610	0,4	1/64
DNGA150408EFWMT	DNGA432EFWMT	12,70	1/2	15,50	.610	0,8	1/32
DNGA150412EFWMT	DNGA433EFWMT	12,70	1/2	15,50	.610	1,2	3/64

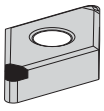
DNGA-MT

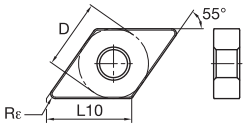




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGA150404S01025MT	DNGA431S0425MT	12,70	1/2	15,50	.610	0,4	1/64
DNGA150408S01020MT	DNGA432S0420MT	12,70	1/2	15,50	.610	0,8	1/32
DNGA150408S01025MT	DNGA432S0425MT	12,70	1/2	15,50	.610	0,8	1/32
DNGA150412S01025MT	DNGA433S0425MT	12,70	1/2	15,50	.610	1,2	3/64

DNGM-CB1





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGM150408S01325MTCB1	DNGM432S0525MTCB1	12,70	1/2	15,50	.610	0,8	1/32
DNGM150412S01325MTCB1	DNGM433S0525MTCB1	12,70	1/2	15,50	.610	1,2	3/64


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

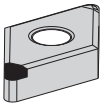

B24–B31

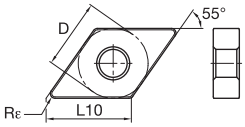

B32–B37

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

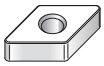
■ DNGM-CB2

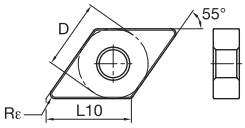




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGM150408S01325MTCB2	DNGM432S0525MTCB2	12,70	1/2	15,50	.610	0,8	1/32
DNGM150412S01325MTCB2	DNGM433S0525MTCB2	12,70	1/2	15,50	.610	1,2	3/64

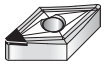
■ DNMA

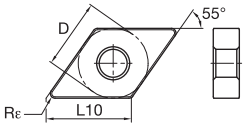




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNMA110408S02020	DNMA332S0820	9,53	3/8	11,63	.458	0,8	1/32
DNMA110412S02020	DNMA333S0820	9,53	3/8	11,63	.458	1,2	3/64

■ DNMS-FST

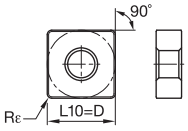




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNMS150404FST	DNMS431FST	12,70	1/2	15,50	.610	0,4	1/64
DNMS150408FST	DNMS432FST	12,70	1/2	15,50	.610	0,8	1/32

■ SNGA-FW





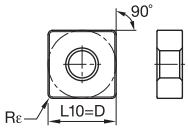
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNGA120408S01020FWMT	SNGA432S0420FWMT	12,70	1/2	12,70	.500	0,8	1/32

● first choice
○ alternate choice

P												
M												
K	●	●										
N			●	○	●							
S				●			○					○
H	○					●	●	●	●	●	●	

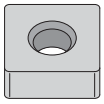
SNGA

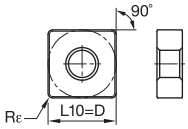




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
SNGA120404S01025MT	SNGA431S0425MT	12,70	1/2	12,70	.500	0,4	1/64										●	
SNGA120408S01025MT	SNGA432S0425MT	12,70	1/2	12,70	.500	0,8	1/32						●				●	
SNGA120412S01025MT	SNGA433S0425MT	12,70	1/2	12,70	.500	1,2	3/64						●				●	

SNMA

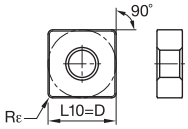




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
SNMA120408S01025	SNMA432S0425	12,70	1/2	12,70	.500	0,8	1/32							●				
SNMA120408S02020	SNMA432S0820	12,70	1/2	12,70	.500	0,8	1/32	●										
SNMA120412S01025	SNMA433S0425	12,70	1/2	12,70	.500	1,2	3/64							●				
SNMA120412S02020	SNMA433S0820	12,70	1/2	12,70	.500	1,2	3/64	●										

SNMS-FST

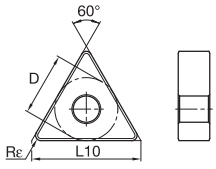




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
SNMS120408FST	SNMS432FST	12,70	1/2	12,70	.500	0,8	1/32					●						
SNMS120412FST	SNMS433FST	12,70	1/2	12,70	.500	1,2	3/64					●						

TNGA-FW MT





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
TNGA160408EFWMT	TNGA332EFWMT	9,53	3/8	16,50	.650	0,8	1/32										●	
TNGA160412EFWMT	TNGA333EFWMT	9,53	3/8	16,50	.650	1,2	3/64										●	


C2–C70


C72–C118


C119–C129


C130–C161



B10–B23


B24–B31

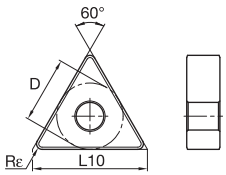

B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

TNGA



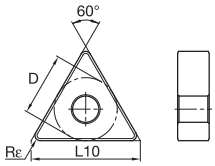


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGA160404S01025MT	TNGA331S0425MT	9,53	3/8	16,50	.650	0,4	1/64
TNGA160408S01020MT	TNGA332S0420MT	9,53	3/8	16,50	.650	0,8	1/32
TNGA160408S01025MT	TNGA332S0425MT	9,53	3/8	16,50	.650	0,8	1/32
TNGA160412S01025MT	TNGA333S0425MT	9,53	3/8	16,50	.650	1,2	3/64
TNGA160416S01025MT	TNGA334S0425MT	9,53	3/8	16,50	.650	1,6	1/16

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
					●		●		●	
	●									
					●	●	●		●	
					●	●			●	
	●									

TNMS-FST

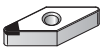


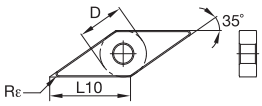


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNMS160404FST	TNMS331FST	9,53	3/8	16,50	.650	0,4	1/64
TNMS160408FST	TNMS332FST	9,53	3/8	16,50	.650	0,8	1/32

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
		●		●						
		●		●						

VNGA-FST

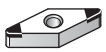


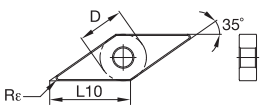


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNGA160404FST	VNGA331FST	9,53	3/8	16,61	.654	0,40	1/64
VNGA160408FST	VNGA332FST	9,53	3/8	16,61	.654	0,80	1/32

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
		●		●						
		●		●						

VNGA-MT



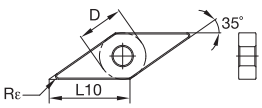


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNGA160404S01025MT	VNGA331S0425MT	9,53	3/8	16,61	.654	0,4	1/64
VNGA160408S01025MT	VNGA332S0425MT	9,53	3/8	16,61	.654	0,8	1/32

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
					●	●	●	●	●	●
					●	●	●	●	●	●

VNMS-E





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMS160404E	VNMS331E	9,53	3/8	16,61	.654	0,4	1/64
VNMS160408E	VNMS332E	9,53	3/8	16,61	.654	0,8	1/32

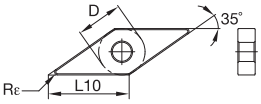
KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
			●							
			●							

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

VNMS-FST

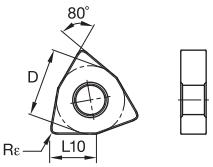




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNMS160404FST	VNMS331FST	9,53	3/8	16,61	.654	0,4	1/64
VNMS160408FST	VNMS332FST	9,53	3/8	16,61	.654	0,8	1/32

WNGA-FST

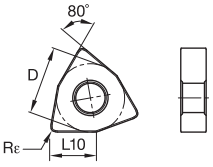




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNGA080404FST	WNGA431FST	12,70	1/2	8,69	.342	0,4	1/64
WNGA080408FST	WNGA432FST	12,70	1/2	8,69	.342	0,8	1/32

WNGA-FW/MT

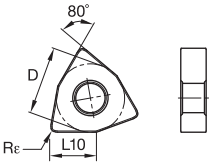




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
WNGA080412S01020FWMT	WNGA433S0420FWMT	12,70	1/2	8,69	.342	1,2	3/64

WNGA





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	max mm	max in
WNGA080404S01025MT	WNGA431S0425MT	12,70	1/2	8,69	.342	0,4	1/64	1,60	.063
WNGA080408S01025MT	WNGA432S0425MT	12,70	1/2	8,69	.342	0,8	1/32	1,12	.044


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

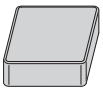

B24–B31

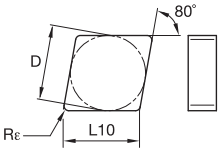

B32–B37

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

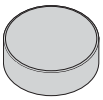
CNM

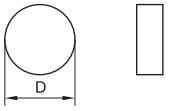




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNMN090308S02020	CNM322S0820	9,53	3/8	9,67	.381	0,8	1/32
CNMN090312S02020	CNM323S0820	9,53	3/8	9,67	.381	1,2	3/64
CNMN120408S02020	CNM432S0820	12,70	1/2	12,90	.508	0,8	1/32
CNMN120412S02020	CNM433S0820	12,70	1/2	12,90	.508	1,2	3/64

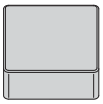
RNM

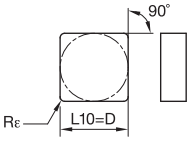




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
RNMN090300S02020	RNM32S0820	9,53	3/8	–	–	–	–
RNMN120300S02020	RNM42S0820	12,70	1/2	–	–	–	–
RNMN120400S02020	RNM43S0820	12,70	1/2	–	–	–	–

SNM





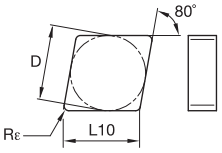
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNMN090308S02020	SNM322S0820	9,53	3/8	9,53	.375	0,8	1/32
SNMN090312S02020	SNM323S0820	9,53	3/8	9,53	.375	1,2	3/64
SNMN090316S02020	SNM324S0820	9,53	3/8	9,53	.375	1,6	1/16
SNMN120308S02020	SNM422S0820	12,70	1/2	12,70	.500	0,8	1/32
SNMN120312S02020	SNM423S0820	12,70	1/2	12,70	.500	1,2	3/64
SNMN120316S02020	SNM424S0820	12,70	1/2	12,70	.500	1,6	1/16
SNMN120416T02020	SNM434S0820	12,70	1/2	12,70	.500	1,6	1/16

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

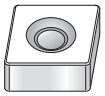
CNGF

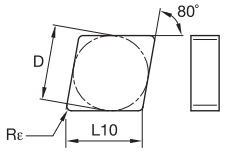




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGF120408	CNGF432	12,70	1/2	12,90	.508	0,8	1/32

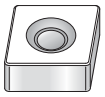
CNGX

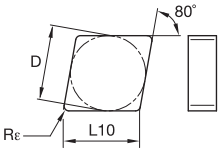




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGX120412S01015	CNGX433S0415	12,70	1/2	12,90	.508	1,20	3/64
CNGX120416S02020	CNGX434S0820	12,70	1/2	12,90	.508	1,60	1/16

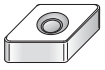
CNGX-FW

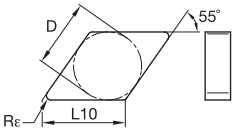




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CNGX120412S01015FW	CNGX433S0415FW	12,70	1/2	12,90	.508	1,2	3/64

DNGX





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DNGX150416S02020	DNGX434S0820	12,70	1/2	15,50	.610	1,6	1/16


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

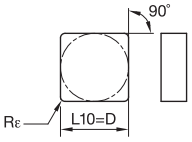

B32–B37

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

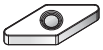
SNGX

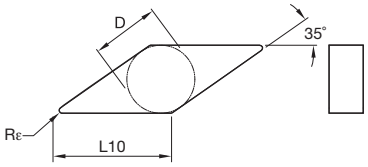




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
SNGX120416S02020	SNGX434S0820	12,70	1/2	12,70	.500	1,6	1/16
SNGX150416S02020	SNGX534S0820	15,88	5/8	15,88	.625	1,6	1/16

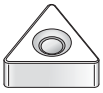
VNGX

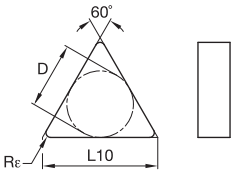




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VNGX160412S02020	VNGX333S0820	9,53	3/8	16,61	.654	1,2	3/64

TNGX-FW





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TNGX160412EFW	TNGX333EFW	9,53	3/8	16,50	.650	1,2	3/64

Clamp Selection Chart

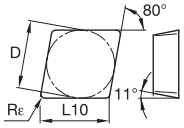
	insert		clamp	
MM	ANSI catalog number	ISO catalog number		
3960807	CNGX433S0415	CNGX120412S01015	551.718 - 100° Corner	551.716 - 80° Corner
3960808	CNGX433S0415FW	CNGX120412S01015FW	551.718 - 100° Corner	551.716 - 80° Corner
3960806	CNGX434S0820	CNGX120416S02020	551.718 - 100° Corner	551.716 - 80° Corner
3960811	DNGX434S0820	DNGX150416S02020	551.720	551.720
3960812	SNGX434S0820	SNGX120416S02020	551.718	551.718
3960823	SNGX534S0820	SNGX150416S02020	551.718	551.718
3960824	VNGX333S0820	VNGX160412S02020	551.721	551.721
3876843	CNGF432	CNGF120408	551.718 - 100° Corner	551.716 - 80° Corner
3960825	TNGX333EFW	TNGX160412EFW	551.733	551.733

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

CPG

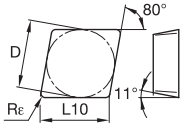




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGN120304F	CPG421F	12,70	1/2	12,90	.508	0,4	1/64
CPGN120308F	CPG422F	12,70	1/2	12,90	.508	0,8	1/32

CPG-MT

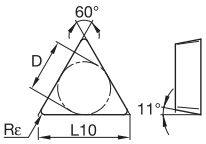




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGN120304S01015MT	CPG421S0415MT	12,70	1/2	12,90	.508	0,4	1/64
CPGN120308S01015MT	CPG422S0415MT	12,70	1/2	12,90	.508	0,8	1/32

TPG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGN110304F	TPG221F	6,35	1/4	11,00	.433	0,4	1/64
TPGN110308F	TPG222F	6,35	1/4	11,00	.433	0,8	1/32
TPGN160304F	TPG321F	9,53	3/8	16,50	.650	0,4	1/64
TPGN160308F	TPG322F	9,53	3/8	16,50	.650	0,8	1/32
TPGN160312F	TPG323F	9,53	3/8	16,50	.650	1,2	3/64
TPGN220404F	TPG431F	12,70	1/2	22,00	.866	0,4	1/64
TPGN220408F	TPG432F	12,70	1/2	22,00	.866	0,8	1/32

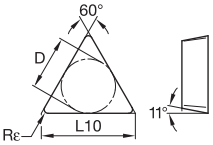
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K	●	●										
N				●	○	●						
S					●				○			○
H	○						●	●	●	●	●	●

■ TPG-M

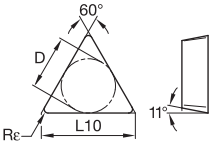




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGN110304EM	**TPG221EM**	6,35	1/4	11,00	.433	0,4	1/64
TPGN110304S01020M	**TPG221S0420M**	6,35	1/4	11,00	.433	0,4	1/64
TPGN160304EM	**TPG321EM**	9,53	3/8	16,50	.650	0,4	1/64
TPGN160304S01020M	**TPG321S0420M**	9,53	3/8	16,50	.650	0,4	1/64
TPGN160308EM	**TPG322EM**	9,53	3/8	16,50	.650	0,8	1/32

■ TPG-MT





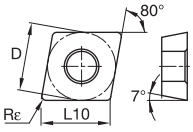
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGN160304S01015MT	**TPG321S0415MT**	9,53	3/8	16,50	.650	0,4	1/64
TPGN160308S01015MT	**TPG322S0415MT**	9,53	3/8	16,50	.650	0,8	1/32
TPGN220404S01015MT	**TPG431S0415MT**	12,70	1/2	22,00	.866	0,4	1/64
TPGN220408S01015MT	**TPG432S0415MT**	12,70	1/2	22,00	.866	0,8	1/32

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

CCGW-C

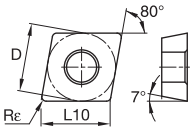




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW060202EC	CCGW21505EC	6,35	1/4	6,45	.254	0,2	.008
CCGW060202S01015C	CCGW21505S0415C	6,35	1/4	6,45	.254	0,2	.008
CCGW060204S01015C	CCGW2151S0415C	6,35	1/4	6,45	.254	0,4	1/64
CCGW09T304S01015C	CCGW3251S0415C	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308EC	CCGW3252EC	9,53	3/8	9,67	.381	0,8	1/32
CCGW09T308S01015C	CCGW3252S0415C	9,53	3/8	9,67	.381	0,8	1/32

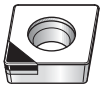
CCGW-EMT

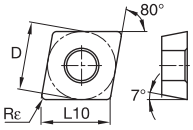




ISO catalog number	ANSI catalog number	D mm	D in.	L10 mm	L10 in	Rε mm	Rε in
CCGW09T304EMT	CCGW3251EMT	9,53	3/8	9,67	.381	0,4	1/64

CCGW-FST

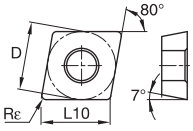




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW060204FST	CCGW2151FST	6,35	1/4	6,45	.254	0,4	1/64
CCGW09T304FST	CCGW3251FST	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308FST	CCGW3252FST	9,53	3/8	9,67	.381	0,8	1/32

CCGW-FWC





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW060202EFWC	CCGW21505EFWC	6,35	1/4	6,45	.254	0,2	.008
CCGW060204EFWC	CCGW2151EFWC	6,35	1/4	6,45	.254	0,4	1/64
CCGW09T304EFWC	CCGW3251EFWC	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308EFWC	CCGW3252EFWC	9,53	3/8	9,67	.381	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

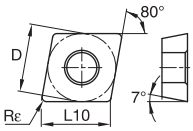

B32–B37

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

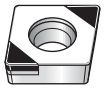
CCGW-FWM

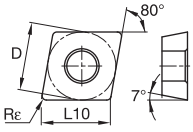




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW060202EFWM	CCGW21505EFWM	6,35	1/4	6,45	.254	0,2	.008
CCGW060204EFWM	CCGW2151EFWM	6,35	1/4	6,45	.254	0,4	1/64
CCGW09T304EFWM	CCGW3251EFWM	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308EFWM	CCGW3252EFWM	9,53	3/8	9,67	.381	0,8	1/32

CCGW-FWMT

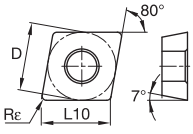




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW09T304S01015FWMT	CCGW3251S0415FWMT	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308S01015FWMT	CCGW3252S0415FWMT	9,53	3/8	9,67	.381	0,8	1/32

CCGW-M

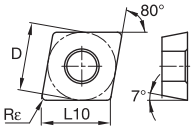




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW060202EM	CCGW21505EM	6,35	1/4	6,45	.254	0,2	.008
CCGW060204S01015M	CCGW2151S0415M	6,35	1/4	6,45	.254	0,4	1/64
CCGW09T304S01015M	CCGW3251S0415M	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308S01015M	CCGW3252S0415M	9,53	3/8	9,67	.381	0,8	1/32

CCGW-MT





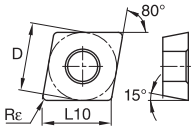
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CCGW09T304S01015MT	CCGW3251S0415MT	9,53	3/8	9,67	.381	0,4	1/64
CCGW09T308S01015MT	CCGW3252S0415MT	9,53	3/8	9,67	.381	0,8	1/32
CCGW120404S01015MT	CCGW431S0415MT	12,70	1/2	12,90	.508	0,4	1/64
CCGW120408S01015MT	CCGW432S0415MT	12,70	1/2	12,90	.508	0,8	1/32

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

CDHB



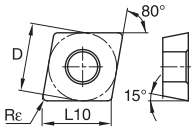


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CDHBS4T0S0	CDHB120601	3,97	5/32	4,03	.159	0,1	.002
CDHBS4T002	CDHB120605	3,97	5/32	4,03	.159	0,2	.007
CDHBS4T004	CDHB12061	3,97	5/32	4,03	.159	0,4	.015

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
									●	
									●	
									●	

CDHB-FST

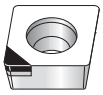


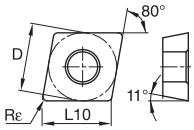


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CDHBS4T004FST	CDHB120601FST	3,97	5/32	4,03	.159	0,1	.002
CDHBS4T002FST	CDHB120605FST	3,97	5/32	4,03	.159	0,2	.007

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
		●		●						
		●		●						

CPGW-E



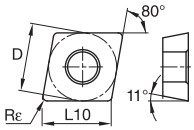


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW060204E	CPGW2151E	6,35	1/4	6,45	.254	0,4	1/64
CPGW09T304E	CPGW3251E	9,53	3/8	9,67	.381	0,4	1/64
CPGW09T308E	CPGW3252E	9,53	3/8	9,67	.381	0,8	1/32

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
			●							
			●							
			●							

CPGW-FWC





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW060202EFWC	CPGW21505EFWC	6,35	1/4	6,45	.254	0,2	.008
CPGW060204EFWC	CPGW2151EFWC	6,35	1/4	6,45	.254	0,4	1/64

KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
								●		
								●		


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

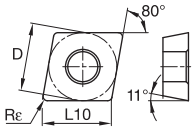

B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

CPGW-FWM

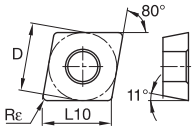




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW060202EFWM	CPGW21505EFWM	6,35	1/4	6,45	.254	0,2	.008
CPGW060204EFWM	CPGW2151EFWM	6,35	1/4	6,45	.254	0,4	1/64
CPGW060208EFWM	CPGW2152EFWM	6,35	1/4	6,45	.254	0,8	1/32

CPGW-FWMT

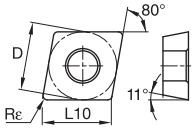




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW09T304S01015FWMT	CPGW3251S0415FWMT	9,53	3/8	9,67	.381	0,4	1/64
CPGW09T308S01015FWMT	CPGW3252S0415FWMT	9,53	3/8	9,67	.381	0,8	1/32

CPGW-FWST

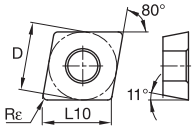




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW060204FWST	CPGW2151FWST	6,35	1/4	6,45	.254	0,4	1/64
CPGW09T308FWST	CPGW3252FWST	9,53	3/8	9,67	.381	0,8	1/32
CPGW120408FWST	CPGW432FWST	12,70	1/2	12,90	.508	0,8	1/32

CPGW-ST



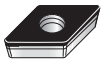


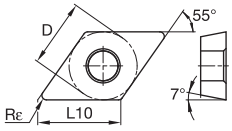
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
CPGW060202FST	CPGW21505FST	6,35	1/4	6,45	.254	0,2	.008
CPGW060204FST	CPGW2151FST	6,35	1/4	6,45	.254	0,4	1/64
CPGW060208FST	CPGW2152FST	6,35	1/4	6,45	.254	0,8	1/32
CPGW09T304FST	CPGW3251FST	9,53	3/8	9,67	.381	0,4	1/64
CPGW09T308FST	CPGW3252FST	9,53	3/8	9,67	.381	0,8	1/32
CPGW120404FST	CPGW431FST	12,70	1/2	12,90	.508	0,4	1/64
CPGW120408FST	CPGW432FST	12,70	1/2	12,90	.508	0,8	1/32

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

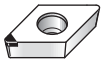
DCGW-C

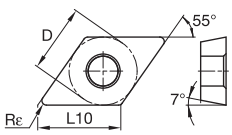




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCGW070202EC	DCGW21505EC	6,35	1/4	7,75	.305	0,2	.008
DCGW070202S01015C	DCGW21505S0415C	6,35	1/4	7,75	.305	0,2	.008
DCGW070204S01015C	DCGW2151S0415C	6,35	1/4	7,75	.305	0,4	1/64

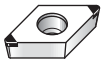
DCGW-FWM

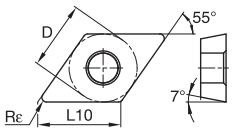




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCGW070204EFWM	DCGW2151EFWM	6,35	1/4	7,75	.305	0,4	1/64

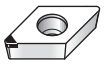
DCGW-FWMT

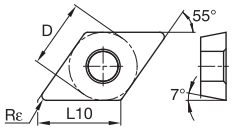




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCGW11T304EFWMT	DCGW3251EFWMT	9,53	3/8	11,63	.458	0,4	1/64
DCGW11T308S01015FWMT	DCGW3252S0415FWMT	9,53	3/8	11,63	.458	0,8	1/32

DCGW-M





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DCGW070202EM	DCGW21505EM	6,35	1/4	7,75	.305	0,2	.008
DCGW070204EM	DCGW2151EM	6,35	1/4	7,75	.305	0,4	1/64
DCGW070204S01015M	DCGW2151S0415M	6,35	1/4	7,75	.305	0,4	1/64
DCGW11T304S01015M	DCGW3251S0415M	9,53	3/8	11,63	.458	0,4	1/64
DCGW11T308S01015M	DCGW3252S0415M	9,53	3/8	11,63	.458	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23

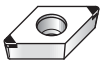

B24–B31

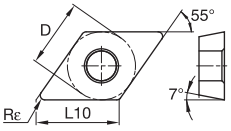

B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

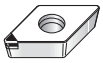
DCGW-MT

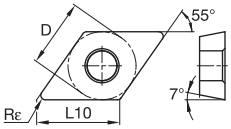




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DCGW11T304S01015MT	DCGW3251S0415MT	9,53	3/8	11,63	.458	0,4	1/64		●				●	●		●		●
DCGW11T308S01015MT	DCGW3252S0415MT	9,53	3/8	11,63	.458	0,8	1/32		●				●	●		●		●

DCGW-ST

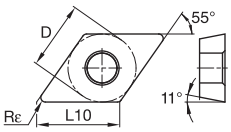




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DCGW070204FST	DCGW2151FST	6,35	1/4	7,75	.305	0,4	1/64			●		●						
DCGW11T304FST	DCGW3251FST	9,53	3/8	11,63	.458	0,4	1/64			●		●						

DPGW-C

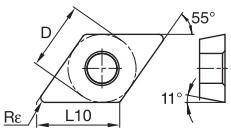




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW070202EC	DPGW21505EC	6,35	1/4	7,75	.305	0,2	.008										●	
DPGW070204S01015C	DPGW2151S0415C	6,35	1/4	7,75	.305	0,4	1/64										●	
DPGW070208S01015C	DPGW2152S0415C	6,35	1/4	7,75	.305	0,8	1/32										●	

DPGW-E

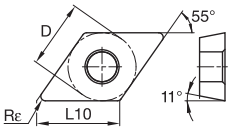




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW070202E	DPGW21505E	6,35	1/4	7,75	.305	0,2	.008				●							
DPGW11T304E	DPGW3251E	9,53	3/8	11,63	.458	0,4	1/64				●							

DPGW-EMT



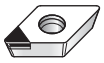


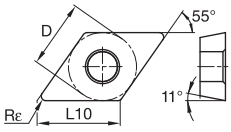
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
DPGW11T304EMT	DPGW3251EMT	9,53	3/8	11,63	.458	0,4	1/64		●									

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

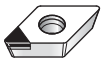
DPGW-FST

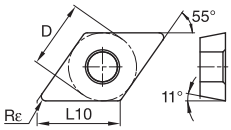




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGW070202FST	DPGW21505FST	6,35	1/4	7,75	.305	0,2	.008
DPGW070204FST	DPGW2151FST	6,35	1/4	7,75	.305	0,4	1/64
DPGW11T304FST	DPGW3251FST	9,53	3/8	11,63	.458	0,4	1/64

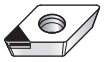
DPGW-FWM

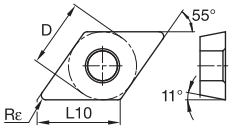




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGW070204S01015FWM	DPGW2151S0415FWM	6,35	1/4	7,75	.305	0,4	1/64

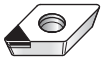
DPGW-FWST

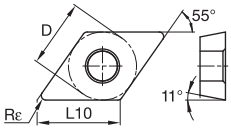




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGW070204FWST	DPGW2151FWST	6,35	1/4	7,75	.305	0,2	.007
DPGW11T304FWST	DPGW3251FWST	9,53	3/8	11,63	.458	0,2	.007

DPGW-M





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGW070202EM	DPGW21505EM	6,35	1/4	7,75	.305	0,2	.008
DPGW070204S01015M	DPGW2151S0415M	6,35	1/4	7,75	.305	0,4	1/64
DPGW070208S01015M	DPGW2152S0415M	6,35	1/4	7,75	.305	0,8	1/32
DPGW11T304S01015M	DPGW3251S0415M	9,53	3/8	11,63	.458	0,4	1/64
DPGW11T308S01015M	DPGW3252S0415M	9,53	3/8	11,63	.458	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31

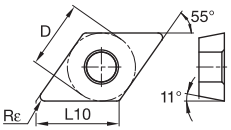

B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K	●	●										
N				●	○	●						
S					●				○			○
H	○						●	●	●	●	●	●

DPGW-MT

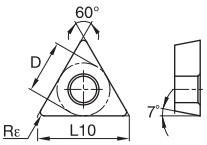




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
DPGW11T304S01015MT	DPGW3251S0415MT	9,53	3/8	11,63	.458	0,4	1/64
DPGW11T308S01015MT	DPGW3252S0415MT	9,53	3/8	11,63	.458	0,8	1/32

TCGW-C

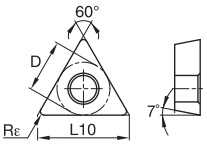




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCGW110202EC	TCGW21505EC	6,35	1/4	11,00	.433	0,20	.008
TCGW110202S01015C	TCGW21505S0415C	6,35	1/4	11,00	.433	0,20	.008
TCGW110204S01015C	TCGW2151S0415C	6,35	1/4	11,00	.433	0,40	1/64

TCGW-FST

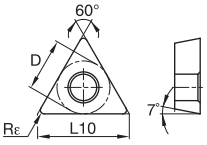




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCGW110204FST	TCGW2151FST	6,35	1/4	11,00	.433	0,40	1/64
TCGW16T304FST	TCGW3251FST	9,53	3/8	16,50	.650	0,40	1/64

TCGW-M





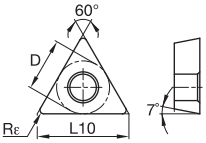
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCGW110202EM	TCGW21505EM	6,35	1/4	11,00	.433	0,2	.008
TCGW110204S01015M	TCGW2151S0415M	6,35	1/4	11,00	.433	0,4	1/64
TCGW16T304S01015M	TCGW3251S0415M	9,53	3/8	16,50	.650	0,4	1/64
TCGW16T308S01015M	TCGW3252S0415M	9,53	3/8	16,50	.650	0,8	1/32

● first choice
○ alternate choice

	KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P											
M											
K	●	●									
N			●	○	●						
S				●				○			○
H	○					●	●	●	●	●	●

TCGW-MT

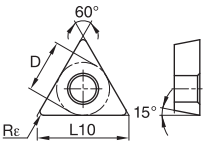




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TCGW16T304S01015MT	TCGW3251S0415MT	9,53	3/8	16,50	.650	0,4	1/64

TDHB

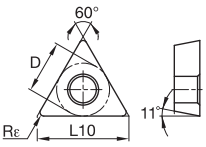




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TDHB07T1202	TDHB12807505	4,06	.160	7,04	.277	0,2	.007

TPGW

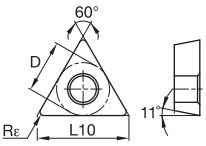




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGW110208E	TPGW2152E	6,35	1/4	11,00	.433	0,80	1/32

TPGW-C





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGW110202EC	TPGW21505EC	6,35	1/4	11,00	.433	0,20	.008
TPGW110204EC	TPGW2151EC	6,35	1/4	11,00	.433	0,40	1/64
TPGW110204S01015C	TPGW2151S0415C	6,35	1/4	11,00	.433	0,40	1/64
TPGW110208S01015C	TPGW2152S0415C	6,35	1/4	11,00	.433	0,80	1/32

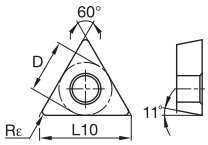
C2–C70 | C72–C118 | C119–C129 | C130–C161 | B10–B23 | B24–B31 | B32–B37

● first choice
○ alternate choice

		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

■ TPGW-FST

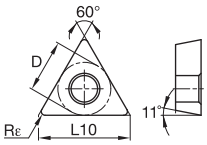




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGW110204FST	TPGW2151FST	6,35	1/4	11,00	.433	0,4	1/64
TPGW110208FST	TPGW2152FST	6,35	1/4	11,00	.433	0,8	1/32
TPGW16T304FST	TPGW3251FST	9,53	3/8	16,50	.650	0,4	1/64
TPGW16T308FST	TPGW3252FST	9,53	3/8	16,50	.650	0,8	1/32

■ TPGW-M

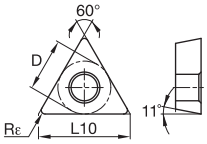




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGW110202EM	TPGW21505EM	6,35	1/4	11,00	.433	0,2	.008
TPGW110204S01015M	TPGW2151S0415M	6,35	1/4	11,00	.433	0,4	1/64
TPGW110208S01015M	TPGW2152S0415M	6,35	1/4	11,00	.433	0,8	1/32
TPGW16T304S01015M	TPGW3251S0415M	9,53	3/8	16,50	.650	0,4	1/64
TPGW16T308S01015M	TPGW3252S0415M	9,53	3/8	16,50	.650	0,8	1/32

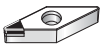
■ TPGW-MT

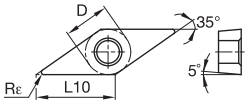




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
TPGW16T308S01015MT	TPGW3252S0415MT	9,53	3/8	16,50	.650	0,8	1/32

■ VBGW-E

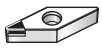


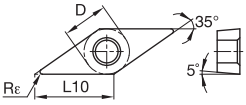


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VBGW160408E	VBGW332E	9,53	3/8	16,61	.654	0,8	1/32

● first choice
○ alternate choice

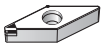
		KB1340	KB1345	KD1400	KD1405	KD1425	KB1610	KB1625	KB1630	KB5610	KB5625	KB5630
P												
M												
K		●	●									
N				●	○	●						
S					●				○			○
H		○					●	●	●	●	●	●

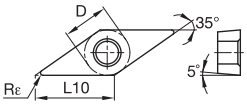




VBGW-FST

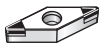
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VBGW110304FST	VBGW221FST	6,35	1/4	11,07	.436	0,4	1/64
VBGW160404FST	VBGW331FST	9,53	3/8	16,61	.654	0,4	1/64

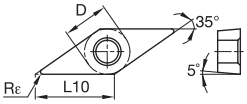




VBGW-M

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VBGW160404S01015M	VBGW331S0415M	9,53	3/8	16,61	.654	0,4	1/64
VBGW160408S01015M	VBGW332S0415M	9,53	3/8	16,61	.654	0,8	1/32





VBGW-MT

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in
VBGW160404S01015MT	VBGW331S0415MT	9,53	3/8	16,61	.654	0,4	1/64
VBGW160408S01015MT	VBGW332S0415MT	9,53	3/8	16,61	.654	0,8	1/32


C2–C70


C72–C118


C119–C129


C130–C161

beyond
B10–B23


B24–B31


B32–B37



Toolholders, Boring Bars, and Cartridges

Toolholders **C2–C70**

Toolholder Selection Guide C2–C3

Kenclamp C6–C14

Kenloc C15–C33

Wedgelock C34–C35

Top Notch C36–C37

Kendex C38–C49

Screw-On C50–C67

V-Bottom C68–C69

Positive Profiling C70

Boring Bars **C72–C129**

Boring Bar Selection Guide C72–C73

Kenclamp C76–C79

Kenloc C80–C86

Top Notch C87

Kendex C88–C93

Screw-On C94–C118

Boring Heads C119–C129

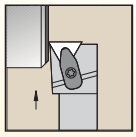
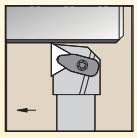
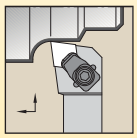
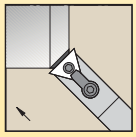
Cartridges **C130–C161**

Kenloc C134–C143

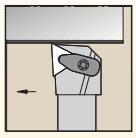
Kendex C144–C148

Screw-On C149–C161

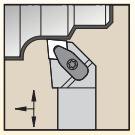
0° Lead Angle

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
	C 80°	Kenloc™	●		●			C15
		Screw-On	●		●			C50–C52
	D 55°	Screw-On	●	●				C56
	V 35°	Screw-On	●	●				C64
	T 60°	Kenloc	●	●	●	●	●	C25–C26, C28
		Kenclamp	●		●			C11–C12
		Kendex™	●		●			C42–C43 C46–C49
		Screw-On	●					C61–C63

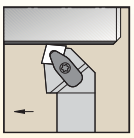
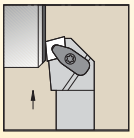
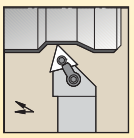
-3° Lead Angle

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
	D 55°	Kenloc	●	●				C20
		Kenclamp	●	●				C8
		Screw-On	●	●				C57–C58
		TNT	●	●				–
	V 35°	Kenloc	●	●				C30–C31
		Kenclamp	●	●				C13
		Screw-On	●	●				C64–C66
	F 50°	Screw-On	●	●				C59
	T 60°	Kenloc	●	●				C28–C29
		Kenclamp	●					C12–C13
		Screw-On	●					C63
		Wedgelock	●	●				C35

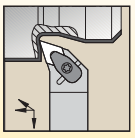
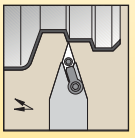
-5° Lead Angle

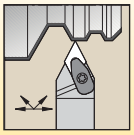
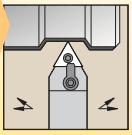
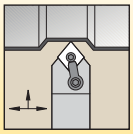
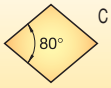
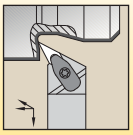
tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
	C 80°	Kenloc	●	●	●			C17, C32
		Kenclamp	●	●	●			C6
		Screw-On	●	●	●			C53–C54
		TNT	●	●	●			C36
	W 80°	Kenloc	●	●	●			C32
		Kenclamp	●	●	●			C14
		Screw-On	●	●	●			C66
		TNT	●	●	●			C37
		Wedgelock™	●	●	●			C35

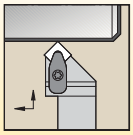
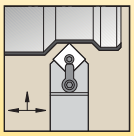
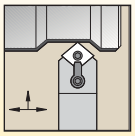
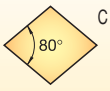
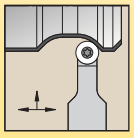
15° and -15° Lead Angle

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
	C 80°	Kenloc	●		●			C16, C19
		Kenclamp	●		●			C6–C7
		Kendex	●					C38
		Screw-On	●		●			C55–C56
		TNT	●					–
	S 90°	Kenloc	●		●			C23
		Kenclamp	●		●			C10
		Kendex	●		●			C40–C41, C44–C45
	T 60°	Kenloc	●	●				C30
		Kendex	●					C42, C46
	-15° lead angle	Wedgelock	●	●	●			C34

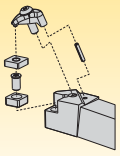
17.5° and -17.5° Lead Angle

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
	D 55°	Kenloc	●	●				C21
		Kenclamp	●	●				C9
		TNT	●	●				–
	F 50°	Screw-On	●	●				–
	V 35°	Kenloc		●				C31
	-17.5° lead angle	Kenclamp		●				C14

tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
27.5° Lead Angle								
	 D 55°	Kenloc™	●	●				C21
		Kenclamp™	●	●				C8
		Screw-On		●				C58
30° Lead Angle								
	 T 60°	Kenloc	●	●				C26
		Kendex™	●	●				C49
		Wedgelock™	●	●				C34
40° Lead Angle								
	 C 80°	Kenloc	●	●	●			C18
		Screw-On	●	●	●			C45
117.5° Lead Angle								
	 V 35°	Kenclamp	●		●			C13

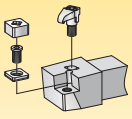
tool path	insert shape	clamping style	turning	profiling	facing	plunging	chamfering	page(s)
45° Lead Angle								
	 S 90°	Kenloc	●	●	●			C22, C24
		Kenclamp	●	●	●			C10–C11
		Kendex	●	●	●			C40–C41, C44–C45
		TNT	●	●	●			C36
50° Lead Angle								
	 C 80°	Kenloc	●	●	●			C16
		Kendex	●	●	●			–
	 R	Kenloc	●		●			C22
		Kenclamp	●		●			C9
		Kendex	●		●			C39
		Screw-On	●	●	●			C59–C61
		V-Bottom	●	●	●			C68–C69

Clamping Styles



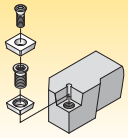
Kenclamp Style

- Suitable for Kenloc inserts.
- Unique clamp design provides rigid clamping.
- Ensures insert repeatability and seating.
- Reduced chatter and improved tool life.



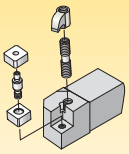
Top Notch™ Turning Style

- Proven superior system in holding ceramic inserts rigidly in turning and profiling operations.
- Uses standard insert sizes — 80°, 75°, 55°, square, and trigon.
- This system offers the added versatility of using optional hardware to hold standard Kendex and Kenloc inserts.



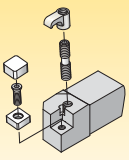
Screw-On Style

- Top clamping by screw for Screw-On inserts.



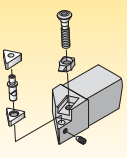
Kenloc Style

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



Kendex Style

- Suitable for Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.

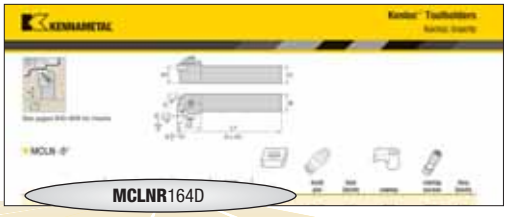


Wedgelock Style

- Top and hole clamping for inserts with hole.

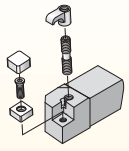
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



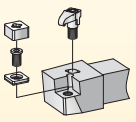
M — Insert Holding Method

C



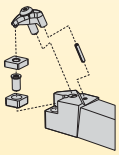
Kendex™

N



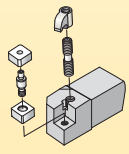
Top Notch™ Profiling

D



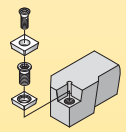
Kenclamp™

M



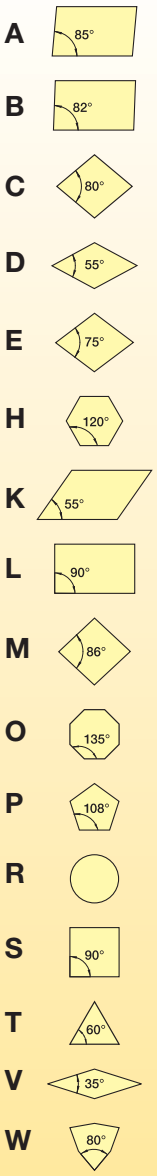
Kenloc™

S

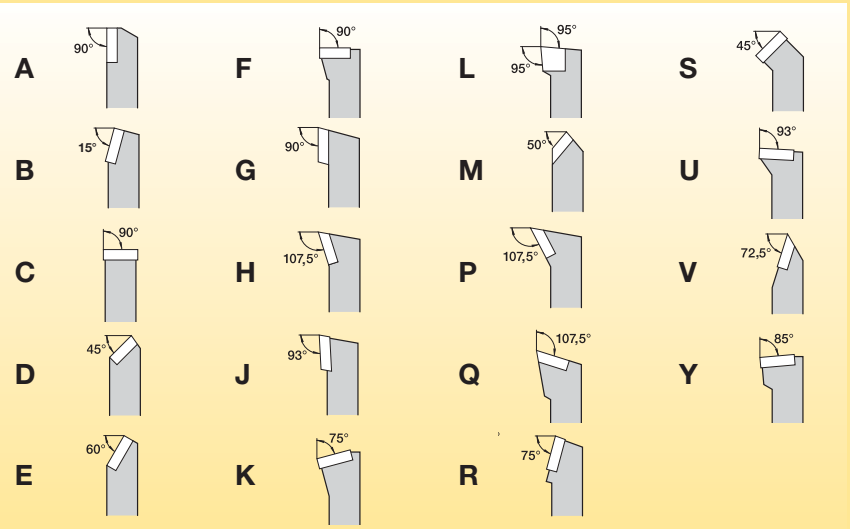


Screw-On

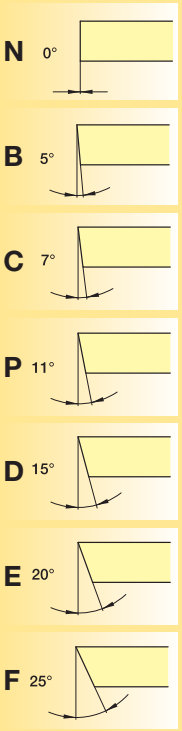
C — Insert Shape



L — Tool Style or Lead Angle



N — Insert Clearance Angle

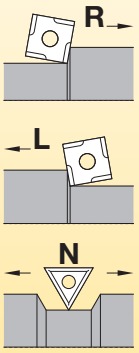


R — Hand of Tool

R = Right hand

L = Left hand

N = Neutral



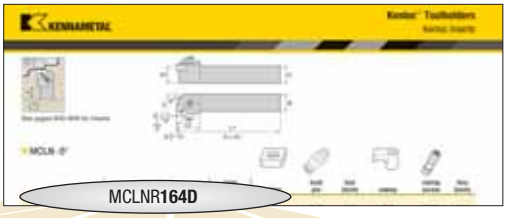
Additional Information

C = Deep pocket for ceramic insert

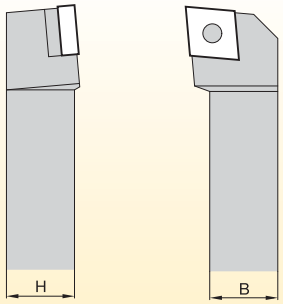
S = Single pocket locating wall

F = Straight shank, no offset

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



1	6	4	D		
Shank Dimensions	Shank Dimensions	Insert Size	Qualified Surface and Length	Additional Information	Insert Thickness *(optional)*



The 7th and 8th position 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.

Insert IC
Number of 1/8ths if "D"

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

3 = .188"
4 = .250"

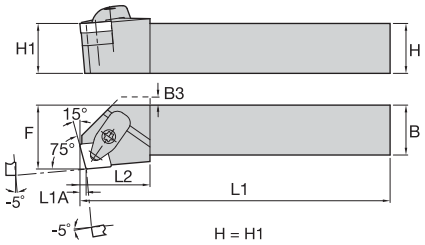
Qualified Surface and Length

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.



See page B40–B44 for inserts.

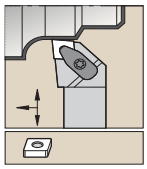


DCKN-KC 15°

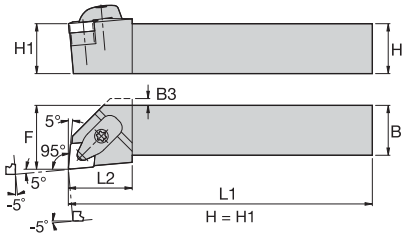





catalog number	H	B	F	L1	L2	L1A	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
DCKNR124BKC3	.75	.75	1.000	4.50	1.25	.122	.22	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNR164CKC3	1.00	1.00	1.250	5.00	1.25	.122	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNR164DKC3	1.00	1.00	1.250	6.00	1.25	.122	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNR204DKC3	1.25	1.25	1.500	6.00	1.25	.122	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNR205DKC4	1.25	1.25	1.500	6.00	1.25	.150	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCKNR206DKC4	1.25	1.25	1.500	6.00	1.50	.183	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
left hand														
DCKNL164DKC3	1.00	1.00	1.250	6.00	1.25	.122	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNL204DKC3	1.25	1.25	1.500	6.00	1.25	.122	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCKNL205DKC4	1.25	1.25	1.500	6.00	1.25	.150	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**



See page B40–B44 for inserts.



DCLN-KC -5°






catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DCLNR123BKC3	.75	.75	1.000	4.50	1.12	.06	CN..332	**ICSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR163DKC3	1.00	1.00	1.250	6.00	1.12	—	CN..332	**ICSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR124BKC3	.75	.75	1.000	4.50	1.25	.15	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR164CKC3	1.00	1.00	1.250	5.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR164DKC3	1.00	1.00	1.250	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR204DKC3	1.25	1.25	1.500	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR244DKC3	1.50	1.50	2.000	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNR165CKC4	1.00	1.00	1.250	5.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNR165DKC4	1.00	1.00	1.250	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNR205DKC4	1.25	1.25	1.500	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNR245DKC4	1.50	1.50	2.000	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**

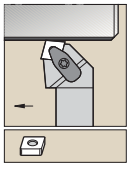
(continued)

(DCLN-KC -5° continued)

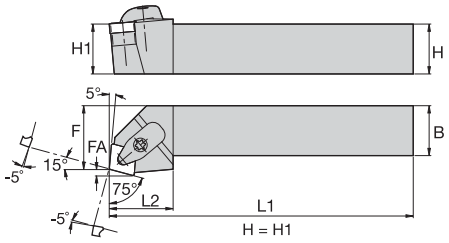





catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
DCLNR166DKC4	1.00	1.00	1.250	6.00	1.62	—	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
DCLNR206DKC4	1.25	1.25	1.500	6.00	1.62	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
DCLNR246DKC4	1.50	1.50	2.000	6.00	1.62	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
DCLNR246EKC4	1.50	1.50	2.000	7.00	1.62	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
left hand													
DCLNL123BKC3	.75	.75	1.000	4.50	1.12	.06	CN..332	**ICSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL163DKC3	1.00	1.00	1.250	6.00	1.12	—	CN..332	**ICSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL124BKC3	.75	.75	1.000	4.50	1.25	.15	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL164CKC3	1.00	1.00	1.250	5.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL164DKC3	1.00	1.00	1.250	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL854DKC3	1.25	1.00	1.250	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL204DKC3	1.25	1.25	1.500	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL244DKC3	1.50	1.50	2.000	6.00	1.25	—	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCLNL165CKC4	1.00	1.00	1.250	5.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNL165DKC4	1.00	1.00	1.250	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNL205DKC4	1.25	1.25	1.500	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNL245DKC4	1.50	1.50	2.000	6.00	1.38	—	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCLNL166DKC4	1.00	1.00	1.250	6.00	1.62	—	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
DCLNL206DKC4	1.25	1.25	1.500	6.00	1.62	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
DCLNL246DKC4	1.50	1.50	2.000	6.00	1.62	—	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**



See page B40–B44 for inserts.

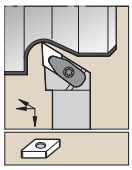


DCRN-KC 15°

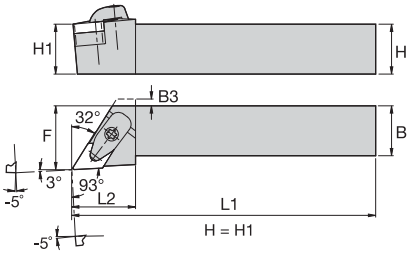





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DCRNR124BKC3	.75	.75	.878	4.50	1.25	.12	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCRNR164DKC3	1.00	1.00	1.128	6.00	1.25	.12	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCRNR204DKC3	1.25	1.25	1.378	6.00	1.25	.12	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCRNR245DKC4	1.50	1.50	1.851	6.00	1.38	.15	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCRNR206DKC4	1.25	1.25	1.501	6.00	1.38	.18	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
left hand													
DCRNL164DKC3	1.00	1.00	1.128	6.00	1.25	.12	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCRNL204DKC3	1.25	1.25	1.378	6.00	1.25	.12	CN..432	**ICSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DCRNL245DKC4	1.50	1.50	1.851	6.00	1.38	.15	CN..543	**ICSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DCRNL206DKC4	1.25	1.25	1.501	6.00	1.38	.18	CN..643	**ICSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**

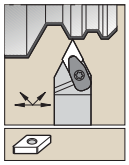


See page B50–B57 for inserts.

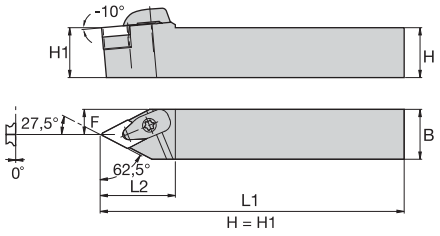


DDJN-KC -3°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DDJNR123BKC3	.75	.75	1.000	4.50	1.25	.06	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR163CKC3	1.00	1.00	1.250	5.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR163DKC3	1.00	1.00	1.250	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR203DKC3	1.25	1.25	1.500	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR164CKC3	1.00	1.00	1.250	5.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR164DKC3	1.00	1.00	1.250	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR204DKC3	1.25	1.25	1.500	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNR165DKC4	1.00	1.00	1.250	6.00	1.38	.15	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DDJNR205DKC4	1.25	1.25	1.500	6.00	1.38	—	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DDJNR245DKC4	1.50	1.50	2.000	6.00	1.38	—	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
left hand													
DDJNL123BKC3	.75	.75	1.000	4.50	1.25	.06	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL163CKC3	1.00	1.00	1.250	5.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL163DKC3	1.00	1.00	1.250	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL203DKC3	1.25	1.25	1.500	6.00	1.25	—	DN..332	**IDSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL164CKC3	1.00	1.00	1.250	5.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL164DKC3	1.00	1.00	1.250	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL204DKC3	1.25	1.25	1.500	6.00	1.25	—	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDJNL165DKC4	1.00	1.00	1.250	6.00	1.38	.15	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DDJNL205DKC4	1.25	1.25	1.500	6.00	1.38	—	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DDJNL245DKC4	1.50	1.50	2.000	6.00	1.38	—	DN..543	**IDSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**

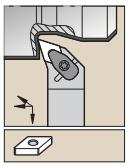


See page B50–B57 for inserts.

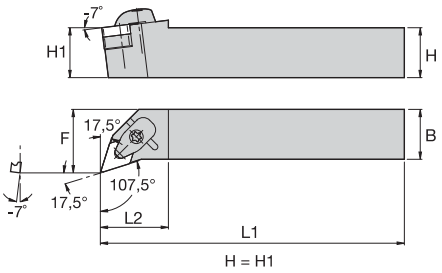


DDPN-KC 27.5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
DDPNN164DKC3	1.00	1.00	.500	6.00	1.62	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

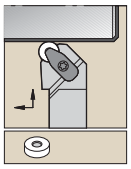


See page B50–B57 for inserts.

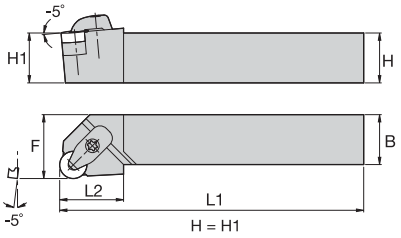


DDQN-KC -17.5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand												
DDQNR164CKC3	1.00	1.00	1.250	5.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDQNR164DKC3	1.00	1.00	1.250	6.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDQNR204DKC3	1.25	1.25	1.500	6.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand												
DDQNL164CKC3	1.00	1.00	1.250	5.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDQNL164DKC3	1.00	1.00	1.250	6.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DDQNL204DKC3	1.25	1.25	1.500	6.00	1.38	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

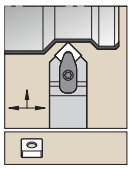


See page B58 for inserts.

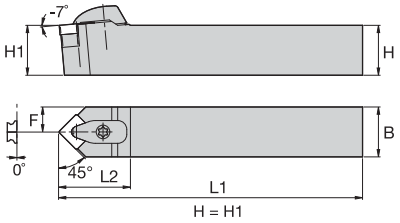


DRGN-KC

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand												
DRGNR124BKC3	.75	.75	1.000	4.50	1.25	RN..43	**IRSN43**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNR164DKC3	1.00	1.00	1.250	6.00	1.25	RN..43	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNR204DKC3	1.25	1.25	1.500	6.00	1.25	RN..43	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNR165DKC4	1.00	1.00	1.250	6.00	1.25	RN..54	**IRSN54**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DRGNR206DKC4	1.25	1.25	1.500	6.00	1.38	RN..64	**IRSN64**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**
left hand												
DRGNL124BKC3	.75	.75	1.000	4.50	1.25	RN..43	**IRSN43**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNL164DKC3	1.00	1.00	1.250	6.00	1.25	RN..43	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNL204DKC3	1.25	1.25	1.500	6.00	1.25	RN..43	**IRSN44**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DRGNL165DKC4	1.00	1.00	1.250	6.00	1.25	RN..54	**IRSN54**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DRGNL206DKC4	1.25	1.25	1.500	6.00	1.38	RN..64	**IRSN64**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**



See pages B59–B65 for inserts.

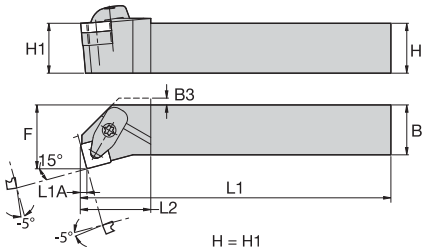


DSDN-KC 45°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
DSDNN124KC3	.75	.75	.365	4.50	1.44	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSDNN164KC3	1.00	1.00	.500	6.00	1.44	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSDNN204KC3	1.25	1.25	.625	6.00	1.44	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSDNN206KC4	1.25	1.25	.625	6.00	1.75	SN..643	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**

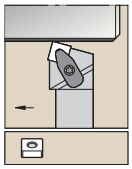


See pages B59–B65 for inserts.

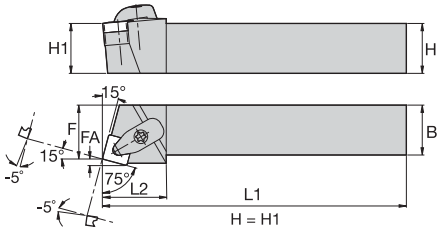


DSKN-KC 15°

catalog number	H	B	F	L1	L2	L1A	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
DSKNR164CKC3	1.00	1.00	1.250	5.00	1.25	.12	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSKNR164DKC3	1.00	1.00	1.250	6.00	1.25	.12	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand														
DSKNL164CKC3	1.00	1.00	1.250	5.00	1.25	.12	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSKNL164DKC3	1.00	1.00	1.250	6.00	1.25	.12	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**



See pages B59–B65 for inserts.



DSRN-KC 15°

catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DSRNR124BKC3	.75	.75	.880	4.50	1.25	.12	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNR164CKC3	1.00	1.00	1.130	5.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNR164DKC3	1.00	1.00	1.130	6.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNR204DKC3	1.25	1.25	1.380	6.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNR206DKC4	1.25	1.25	1.321	6.00	1.50	.18	SN..643	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**

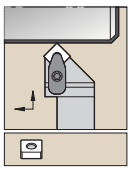
(continued)

(DSRN-KC 15° continued)

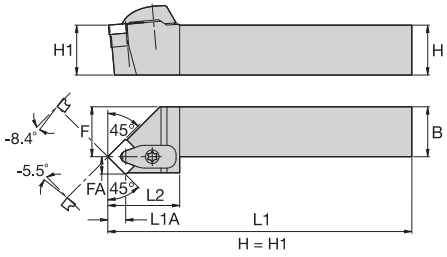





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
left hand													
DSRNL124BKC3	.75	.75	.880	4.50	1.25	.12	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNL164CKC3	1.00	1.00	1.130	5.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNL164DKC3	1.00	1.00	1.130	6.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNL204DKC3	1.25	1.25	1.380	6.00	1.25	.12	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DSRNL165DKC4	1.00	1.00	1.103	6.00	1.50	.15	SN..543	**ISSN543**	**KMSP515IP**	15 IP	**CM209R ASSY**	15 IP	**SSP025016M**
DSRNL206DKC4	1.25	1.25	1.321	6.00	1.50	.18	SN..643	**ISSN643**	**KMSP625IP**	25 IP	**CM210R ASSY**	25 IP	**SSP025016M**



See pages B59–B65 for inserts.

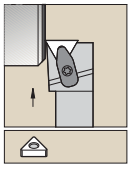


DSSN-KC 45°

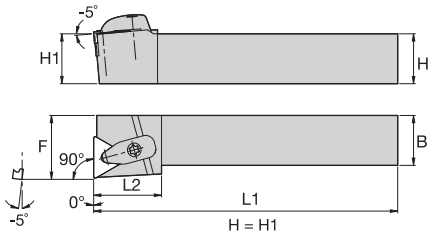





catalog number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand														
DSSNR164DKC3	1.00	1.00	.912	6.00	1.50	.34	.33	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand														
DSSNL164DKC3	1.00	1.00	.912	6.00	1.50	.34	.33	SN..432	**ISSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**



See pages B66–B74 for inserts.

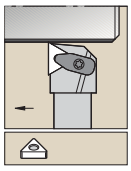


DTFN-KC 0°

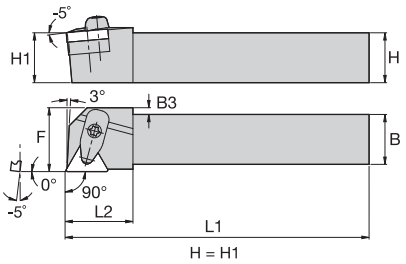





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand												
DTFNR123BKC3	.75	.75	1.000	4.50	1.3	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNR163DKC3	1.00	1.00	1.250	6.00	1.3	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNR164CKC3	1.00	1.00	1.250	5.00	1.4	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNR164DKC3	1.00	1.00	1.250	6.00	1.4	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand												
DTFNL123BKC3	.75	.75	1.000	4.50	1.3	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNL163DKC3	1.00	1.00	1.250	6.00	1.3	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNL164CKC3	1.00	1.00	1.250	5.00	1.4	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTFNL164DKC3	1.00	1.00	1.250	6.00	1.4	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

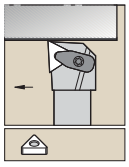


See pages B66–B74 for inserts.

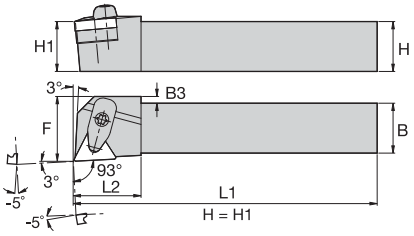


DTGN-KC 0°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DTGNR123BKC3	.75	.75	1.000	4.50	1.12	.25	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTGNR163DKC3	1.00	1.00	1.250	6.00	1.12	—	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTGNR164DKC3	1.00	1.00	1.250	6.00	1.25	.09	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand													
DTGNL123BKC3	.75	.75	1.000	4.50	1.12	.25	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTGNL163DKC3	1.00	1.00	1.250	6.00	1.12	—	TN..332	**ITSN323**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DTGNL164DKC3	1.00	1.00	1.250	6.00	1.25	.09	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

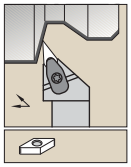


See pages B66–B74 for inserts.

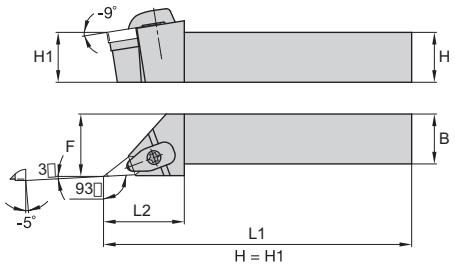


DTJN-KC -3°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DTJNR164DKC3	1.00	1.00	1.250	6.00	1.25	.12	TN..432	**ITSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**

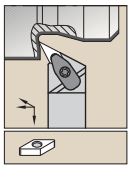


See pages B74–B78 for inserts.

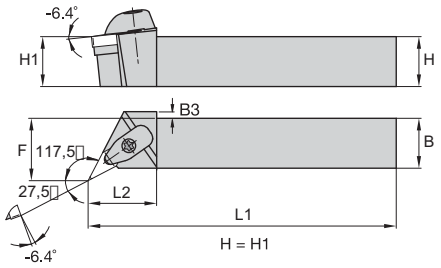


DVJN-KC -3°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand												
DVJNR123CKC3	.75	.75	1.000	5.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNR163DKC3	1.00	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNR853DKC3	1.25	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNR164DKC3	1.00	1.00	1.250	6.00	2.00	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**
DVJNR854DKC3	1.25	1.00	1.250	6.00	2.00	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**
left hand												
DVJNL123CKC3	.75	.75	1.000	5.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNL163DKC3	1.00	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNL853DKC3	1.25	1.00	1.250	6.00	1.82	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVJNL164DKC3	1.00	1.00	1.250	6.00	2.00	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**
DVJNL854DKC3	1.25	1.00	1.250	6.00	2.00	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**

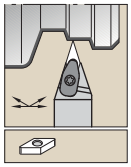


See pages B74–B78 for inserts.

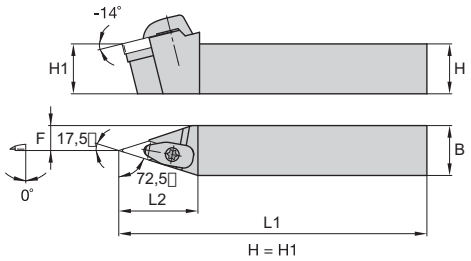


DVON-KC -117.5°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DVONR123CKC3	.75	.75	1.000	5.00	1.50	.25	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVONR163DKC3	1.00	1.00	1.250	6.00	1.47	—	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVONR853DKC3	1.25	1.00	1.250	6.00	1.47	—	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
left hand													
DVONL123CKC3	.75	.75	1.000	5.00	1.50	.25	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVONL163DKC3	1.00	1.00	1.250	6.00	1.47	—	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVONL853DKC3	1.25	1.00	1.250	6.00	1.47	—	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**

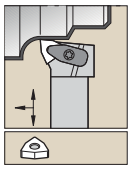


See pages B74–B78 for inserts.

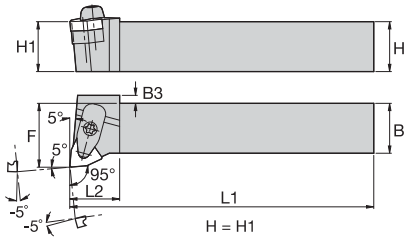


DVVN-KC 17.5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
DVVNN123CKC3	.75	.75	.371	5.00	1.94	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVVNN163DKC3	1.00	1.00	.496	6.00	1.97	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVVNN853DKC3	1.25	1.00	.496	6.00	1.88	VN..332	**IVSN322**	**KMSP315IP**	15 IP	**CM215R ASSY**	15 IP	**SSP025016M**
DVVNN164DKC3	1.00	1.00	.496	6.00	2.28	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**
DVVNN854DKC3	1.25	1.00	.496	6.00	2.28	VN..432	**IVSN432**	**KMSP415IP**	15 IP	**CM235R ASSY**	15 IP	**SSP025016M**

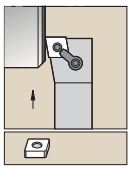


See pages B79–B83 for inserts.

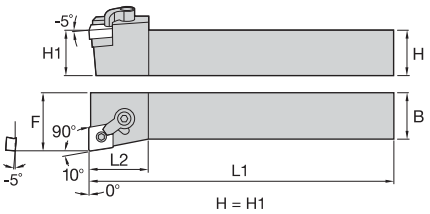


DWLN-KC -5°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin
right hand													
DWLNR123BKC3	.75	.75	1.000	4.50	1.00	.28	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNR163CKC3	1.00	1.00	1.250	5.00	1.00	.06	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNR163DKC3	1.00	1.00	1.250	6.00	1.00	.06	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNR164CKC3	1.00	1.00	1.250	5.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNR164DKC3	1.00	1.00	1.250	6.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNR204DKC3	1.25	1.25	1.500	6.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
left hand													
DWLNL123BKC3	.75	.75	1.000	4.50	1.00	.28	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNL163CKC3	1.00	1.00	1.250	5.00	1.00	.06	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNL163DKC3	1.00	1.00	1.250	6.00	1.00	.06	WN..332	**IWSN322**	**KMSP315IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNL164CKC3	1.00	1.00	1.250	5.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNL164DKC3	1.00	1.00	1.250	6.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**
DWLNL204DKC3	1.25	1.25	1.500	6.00	1.00	—	WN..432	**IWSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	15 IP	**SSP025016M**



See pages B40–B49 for inserts.



MCFN 0°

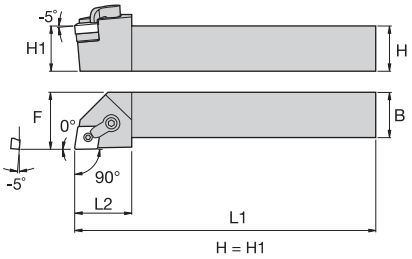





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MCFNR124B	.75	.75	1.000	4.50	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFNR164C	1.00	1.00	1.250	5.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFNR164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
left hand												
MCFNL164C	1.00	1.00	1.250	5.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCFNL164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8



See pages B40–B49 for inserts.

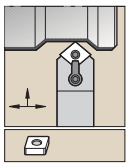


MCGN 0°

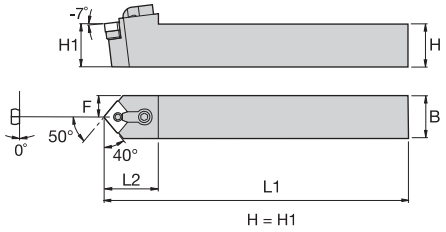





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MCGNR124B	.75	.75	1.000	4.50	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGNR164C	1.00	1.00	1.250	5.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGNR164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
left hand												
MCGNL124B	.75	.75	1.000	4.50	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGNL164C	1.00	1.00	1.250	5.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCGNL164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8



See pages B40–B49 for inserts.

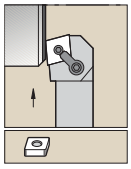


MCHN 50°

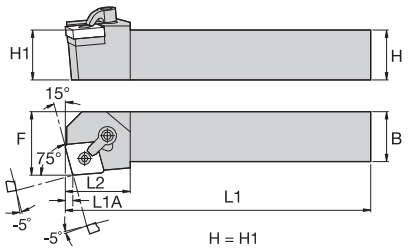





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MCHNN164C	1.00	1.00	.500	5.00	1.25	CN..432	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
MCHNN205D	1.25	1.25	.625	6.00	1.38	CN..543	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
MCHNN246D	1.50	1.50	.750	6.00	1.60	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B40–B49 for inserts.

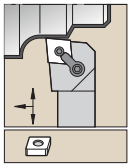


MCKN 15°

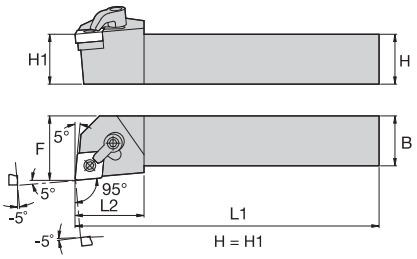





catalog number	H	B	F	L1	L2	L1A	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MCKNR124B	.75	.75	1.000	4.50	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNR164C	1.00	1.00	1.250	5.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNR164D	1.00	1.00	1.250	6.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNR165C	1.00	1.00	1.250	5.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNR165D	1.00	1.00	1.250	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNR204D	1.25	1.25	1.500	6.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNR205D	1.25	1.25	1.500	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNR206D	1.25	1.25	1.500	6.00	1.47	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCKNR245D	1.50	1.50	2.000	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNR246D	1.50	1.50	2.000	6.00	1.47	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand													
MCKNL124B	.75	.75	1.000	4.50	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNL164C	1.00	1.00	1.250	5.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNL164D	1.00	1.00	1.250	6.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNL165D	1.00	1.00	1.250	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNL204D	1.25	1.25	1.500	6.00	1.21	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCKNL205D	1.25	1.25	1.500	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNL206D	1.25	1.25	1.500	6.00	1.47	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCKNL245D	1.50	1.50	2.000	6.00	1.25	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCKNL246D	1.50	1.50	2.000	6.00	1.47	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B40–B49 for inserts.



MCLN -5°






catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MCLNR083A	.50	.50	.750	4.00	1.00	CN..322	—	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLNR103A	.63	.63	.875	4.00	1.00	CN..322	—	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLNR123B	.75	.75	1.000	4.50	1.00	CN..322	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLNR124A	.75	.75	1.000	4.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR124B	.75	.75	1.000	4.50	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR163C	1.00	1.00	1.250	5.00	1.00	CN..322	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLNR163D	1.00	1.00	1.250	6.00	1.00	CN..322	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLNR164C	1.00	1.00	1.250	5.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR164D	1.00	1.00	1.250	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR165C	1.00	1.00	1.250	5.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNR165D	1.00	1.00	1.250	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNR166C	1.00	1.00	1.250	5.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR166D	1.00	1.00	1.250	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR204D	1.25	1.25	1.500	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR205D	1.25	1.25	1.500	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNR206D	1.25	1.25	1.500	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR244D	1.50	1.50	2.000	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR245D	1.50	1.50	2.000	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNR245E	1.50	1.50	2.000	7.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNR246D	1.50	1.50	2.000	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR246E	1.50	1.50	2.000	7.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR248E	1.50	1.50	2.000	7.00	1.49	CN..866	**ICSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
MCLNR326F	2.00	2.00	2.500	8.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR854D	1.25	1.00	1.250	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNR856D	1.25	1.00	1.250	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR866D	1.50	1.00	1.250	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNR866E	1.50	1.00	1.250	7.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32

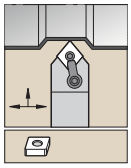
(continued)

(MCLN -5° continued)

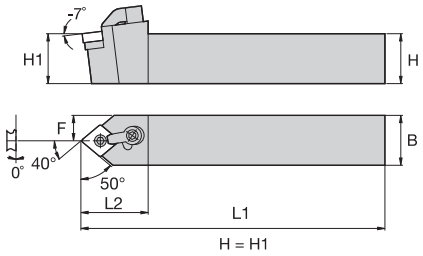





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
left hand												
MCLNL083A	.50	.50	.750	4.00	1.00	CN..322	**–**	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLNL103A	.63	.63	.875	4.00	1.00	CN..322	**–**	**KL33**	5/64	**CK6**	**STC5**	3/32
MCLNL123B	.75	.75	1.000	4.50	1.00	CN..322	**ICSN332**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MCLNL124A	.75	.75	1.000	4.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL124B	.75	.75	1.000	4.50	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL164C	1.00	1.00	1.250	5.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL164D	1.00	1.00	1.250	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL165C	1.00	1.00	1.250	5.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNL165D	1.00	1.00	1.250	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNL166C	1.00	1.00	1.250	5.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL166D	1.00	1.00	1.250	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL204D	1.25	1.25	1.500	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL205D	1.25	1.25	1.500	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNL206D	1.25	1.25	1.500	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL244D	1.50	1.50	2.000	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL245D	1.50	1.50	2.000	6.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNL245E	1.50	1.50	2.000	7.00	1.37	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MCLNL246D	1.50	1.50	2.000	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL246E	1.50	1.50	2.000	7.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL248E	1.50	1.50	2.000	7.00	1.49	CN..866	**ICSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
MCLNL326F	2.00	2.00	2.500	8.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL854D	1.25	1.00	1.250	6.00	1.20	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCLNL856D	1.25	1.00	1.250	6.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCLNL866E	1.50	1.00	1.250	7.00	1.49	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B40–B49 for inserts.

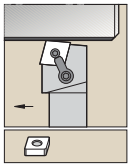


MCMN 40°

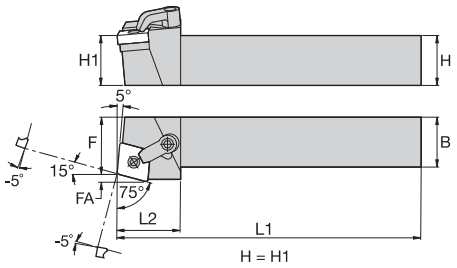





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MCMNN124B	.75	.75	.375	4.500	1.39	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN164C	1.00	1.00	.500	5.000	1.39	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN164D	1.00	1.00	.500	6.000	1.39	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN204D	1.25	1.25	.625	6.000	1.39	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
MCMNN166D	1.00	1.00	.500	6.000	1.67	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN206D	1.25	1.25	.625	6.000	1.67	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN246D	1.50	1.50	.750	6.000	1.67	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCMNN246E	1.50	1.50	.750	7.000	1.67	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B40–B49 for inserts.

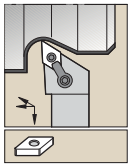


MCRN 15°

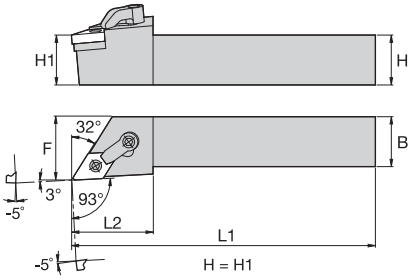





catalog number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MCRNR124B	.75	.75	.751	4.50	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNR164C	1.00	1.00	1.251	5.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNR164D	1.00	1.00	1.251	6.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNR165D	1.00	1.00	1.251	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNR166D	1.00	1.00	1.251	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNR204D	1.25	1.25	1.500	6.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNR205D	1.25	1.25	1.501	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNR206D	1.25	1.25	1.501	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNR244D	1.50	1.50	2.001	6.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNR245D	1.50	1.50	2.001	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNR246D	1.50	1.50	2.001	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNR246E	1.50	1.50	2.001	7.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand													
MCRNL124B	.75	.75	.751	4.50	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNL164C	1.00	1.00	1.251	5.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNL164D	1.00	1.00	1.251	6.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNL165D	1.00	1.00	1.251	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNL166D	1.00	1.00	1.251	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNL204D	1.25	1.25	1.500	6.00	1.24	.12	CN..432	**ICSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MCRNL205D	1.25	1.25	1.501	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNL206D	1.25	1.25	1.501	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNL245D	1.50	1.50	2.001	6.00	1.34	.15	CN..543	**ICSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MCRNL246D	1.50	1.50	2.001	6.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MCRNL246E	1.50	1.50	2.001	7.00	1.49	.18	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B50–B57 for inserts.

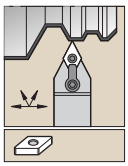


MDJN -3°

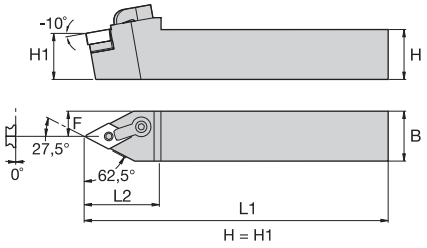





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MDJNR123B	.75	.75	1.000	4.50	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNR163C	1.00	1.00	1.250	5.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNR163D	1.00	1.00	1.250	6.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNR203D	1.25	1.25	1.500	6.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNR243D	1.50	1.50	2.000	6.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNR124B	.75	.75	1.000	4.50	1.38	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJNR124A	.75	.75	1.000	4.00	1.38	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJNR164C	1.00	1.00	1.250	5.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNR164D	1.00	1.00	1.250	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNR854D	1.25	1.00	1.250	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNR204D	1.25	1.25	1.500	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNR165D	1.00	1.00	1.250	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNR205D	1.25	1.25	1.500	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNR245D	1.50	1.50	2.000	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNR245E	1.50	1.50	2.000	7.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
left hand												
MDJNL123B	.75	.75	1.000	4.50	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNL163C	1.00	1.00	1.250	5.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNL163D	1.00	1.00	1.250	6.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNL203D	1.25	1.25	1.500	6.00	1.25	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDJNL124B	.75	.75	1.000	4.50	1.38	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJNL124A	.75	.75	1.000	4.00	1.38	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDJNL164C	1.00	1.00	1.250	5.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNL164D	1.00	1.00	1.250	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNL854D	1.25	1.00	1.250	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNL204D	1.25	1.25	1.500	6.00	1.24	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDJNL165D	1.00	1.00	1.250	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNL205D	1.25	1.25	1.500	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNL245D	1.50	1.50	2.000	6.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDJNL245E	1.50	1.50	2.000	7.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32



See pages B50–B57 for inserts.

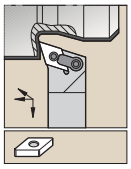


MDPN 27.5°

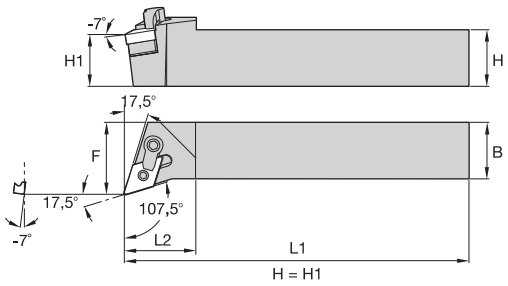





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MDPNN123B	.75	.75	.375	4.50	1.50	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN163C	1.00	1.00	.500	5.00	1.50	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN163D	1.00	1.00	.500	6.00	1.50	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
MDPNN164D	1.00	1.00	.500	6.00	1.63	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
MDPNN855D	1.25	1.00	.500	6.00	1.92	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDPNN205D	1.25	1.25	.625	6.00	1.92	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MDPNN245D	1.50	1.50	.750	6.00	1.92	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32



See pages B50–B57 for inserts.

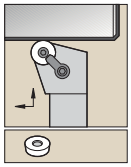


MDQN -17.5°

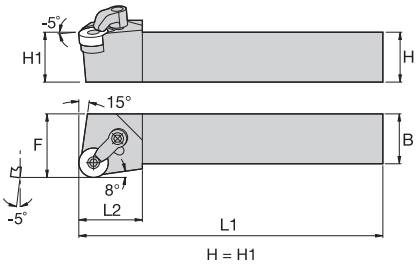





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MDQNR124B	.75	.75	1.000	4.50	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDQNR164C	1.00	1.00	1.250	5.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNR164D	1.00	1.00	1.250	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNR204D	1.25	1.25	1.500	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNR244D	1.50	1.50	2.000	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNR244E	1.50	1.50	2.000	7.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
left hand												
MDQNL124B	.75	.75	1.000	4.50	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK23**	**STC20**	1/8
MDQNL164C	1.00	1.00	1.250	5.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNL164D	1.00	1.00	1.250	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNL204D	1.25	1.25	1.500	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNL244D	1.50	1.50	2.000	6.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNL244E	1.50	1.50	2.000	7.00	1.37	DN..432	**IDSN443**	**KL46L**	3/32	**CK20**	**STC20**	1/8
MDQNL245E	1.50	1.50	2.000	7.00	1.47	DN..543	**IDSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32



See page B58 for inserts.

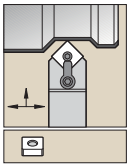


MRGN

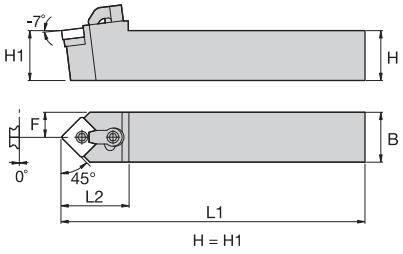





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MRGNR123B	.75	.75	1.000	4.50	.88	RN..32	**IRSN33**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MRGNR124B	.75	.75	1.000	4.50	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK21**	**STC20**	1/8
MRGNR163D	1.00	1.00	1.250	6.00	.88	RN..32	**IRSN33**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MRGNR164C	1.00	1.00	1.250	5.00	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGNR164D	1.00	1.00	1.250	6.00	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGNR165D	1.00	1.00	1.250	6.00	1.25	RN..54	**IRSN53**	**KL58**	1/8	**CK12**	**STC4**	5/32
MRGNR166D	1.00	1.00	1.250	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNR204D	1.25	1.25	1.500	6.00	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGNR206D	1.25	1.25	1.500	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNR246D	1.50	1.50	2.000	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNR248E	1.50	1.50	2.000	7.00	1.56	RN..86	**IRSN84**	**KL810**	5/32	**CK24**	**STC19**	3/16
left hand												
MRGNL164D	1.00	1.00	1.250	6.00	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGNL165D	1.00	1.00	1.250	6.00	1.25	RN..54	**IRSN53**	**KL58**	1/8	**CK12**	**STC4**	5/32
MRGNL166D	1.00	1.00	1.250	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNL204D	1.25	1.25	1.500	6.00	1.00	RN..43	**IRSN43**	**KL46**	3/32	**CK9**	**STC4**	5/32
MRGNL206D	1.25	1.25	1.500	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNL246D	1.50	1.50	2.000	6.00	1.31	RN..64	**IRSN63**	**KL68**	9/64	**CK12**	**STC4**	5/32
MRGNL248E	1.50	1.50	2.000	7.00	1.56	RN..86	**IRSN84**	**KL810**	5/32	**CK24**	**STC19**	3/16



See pages B59–B65 for inserts.

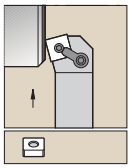


MSDN 45°

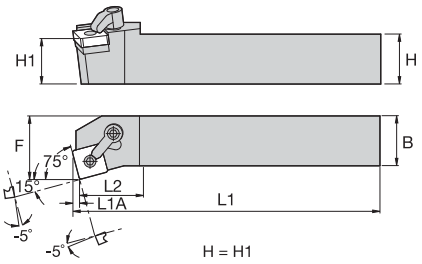





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MSDNN083	.50	.50	.250	4.500	1.14	SN..322	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN103	.63	.63	.312	4.500	1.14	SN..322	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN123	.75	.75	.375	4.500	1.14	SN..322	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSDNN124	.75	.75	.375	4.500	1.39	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN164	1.00	1.00	.500	6.000	1.39	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN854	1.25	1.00	.500	6.000	1.39	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSDNN855	1.25	1.00	.500	6.000	1.62	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSDNN856	1.25	1.00	.500	6.000	1.62	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN206	1.25	1.25	.625	7.000	1.62	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN866	1.50	1.00	.500	7.000	1.62	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSDNN246	1.50	1.50	.750	7.000	1.62	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B59–B65 for inserts.



MSKN 15°

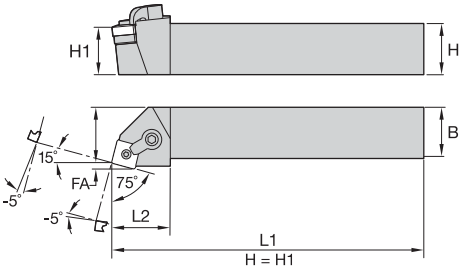





catalog number	H	B	F	L1	L2	L1A	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MSKNR124B	.75	.75	1.000	4.500	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNR164C	1.00	1.00	1.250	5.000	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNR164D	1.00	1.00	1.250	6.000	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNR204D	1.25	1.25	1.500	6.000	1.13	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNR205D	1.25	1.25	1.500	6.000	1.34	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSKNR206D	1.25	1.25	1.500	6.000	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSKNR246D	1.50	1.50	2.000	6.000	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSKNR248	1.50	1.50	2.000	8.000	1.62	.23	SN..866	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
left hand													
MSKNL124B	.75	.75	1.000	4.500	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNL164D	1.00	1.00	1.250	6.000	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNL204D	1.25	1.25	1.500	6.000	1.13	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSKNL205D	1.25	1.25	1.500	6.000	1.34	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSKNL206D	1.25	1.25	1.500	6.000	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSKNL246D	1.50	1.50	2.000	6.000	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



See pages B59–B65 for inserts.



MSRN 15°






catalog number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MSRNR124B	.75	.75	.880	4.50	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNR164C	1.00	1.00	1.130	5.00	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNR164D	1.00	1.00	1.130	6.00	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNR204D	1.25	1.25	1.380	6.00	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNR165C	1.00	1.00	1.103	5.00	1.46	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRNR855D	1.25	1.00	1.103	6.00	1.46	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRNR205D	1.25	1.25	1.353	6.00	1.46	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRNR856D	1.25	1.00	1.071	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNR206D	1.25	1.25	1.321	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNR246D	1.50	1.50	1.821	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNR246E	1.50	1.50	1.821	7.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNR248	1.50	1.50	1.770	8.00	1.62	.23	SN..866	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
MSRNR328	2.00	2.00	2.270	18.00	1.62	.23	SN..866	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16

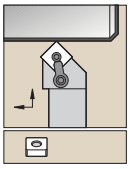
(continued)

(MSRN 15° continued)

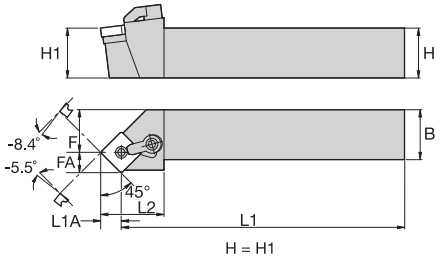





catalog number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
left hand													
MSRNL124B	.75	.75	.880	4.50	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNL164C	1.00	1.00	1.130	5.00	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNL164D	1.00	1.00	1.130	6.00	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNL854D	1.25	1.00	1.130	6.00	1.23	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNL204D	1.25	1.25	1.380	6.00	1.25	.12	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSRNL165C	1.00	1.00	1.103	5.00	1.46	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRNL205D	1.25	1.25	1.353	6.00	1.46	.15	SN..543	**ISSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
MSRNL856D	1.25	1.00	1.071	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNL206D	1.25	1.25	1.321	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNL246D	1.50	1.50	1.821	6.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNL246E	1.50	1.50	1.821	7.00	1.50	.18	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
MSRNL248	1.50	1.50	1.770	8.00	1.62	.23	SN..866	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16
MSRNL328	2.00	2.00	2.270	18.00	1.62	.23	SN..866	**ISSN846**	**KL810**	5/32	**CK24**	**STC19**	3/16



See pages B59–B65 for inserts.

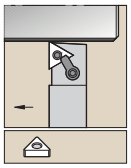


MSSN 45°

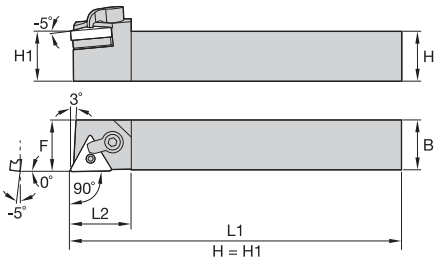





catalog number	H	B	F	L1	L2	F	FA	L1A	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand															
MSSNR123B	.75	.75	.641	4.50	1.12	.64	.25	.25	SN..322	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSSNR124B	.75	.75	.662	4.50	1.24	.66	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNR164C	1.00	1.00	.912	5.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNR164D	1.00	1.00	.912	6.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNR854D	1.25	1.00	.912	6.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNR165D	1.00	1.00	.828	6.00	1.38	.83	.42	.42	SN..543	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSNR205D	1.25	1.25	1.078	6.00	1.38	1.08	.42	.42	SN..543	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSNR246D	1.50	1.50	1.511	6.00	1.48	1.51	.52	.53	SN..643	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32
MSSNR206D	1.25	1.25	.992	6.00	1.48	.99	.52	.53	SN..643	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32
left hand															
MSSNL083B	.50	.50	.391	4.50	1.12	.39	.25	.25	SN..322	**ISSN322**	**KL34**	5/64	**CK6**	**STC5**	3/32
MSSNL164C	1.00	1.00	.912	5.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNL164D	1.00	1.00	.912	6.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNL854D	1.25	1.00	.912	6.00	1.24	.91	.34	.33	SN..432	**ISSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MSSNL165D	1.00	1.00	.828	6.00	1.38	.83	.42	.42	SN..543	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSNL205D	1.25	1.25	1.078	6.00	1.38	1.08	.42	.42	SN..543	**ISSN533**	**KL58**	1/8	**CK9**	**STC4**	5/32
MSSNL246D	1.50	1.50	1.511	6.00	1.48	1.51	.52	.53	SN..643	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32
MSSNL206D	1.25	1.25	.992	6.00	1.48	.99	.52	.53	SN..643	**ISSN633**	**KL68**	9/64	**CK9**	**STC4**	5/32



See pages B66–B74 for inserts.

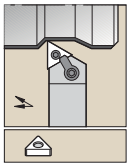


MTAN 0°

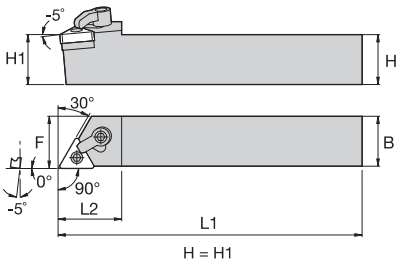





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTANR082B	.50	.50	.500	4.50	.96	TN..221	—	**KL23**	1/16	**CK19**	**STC9**	3/32
MTANR103B	.63	.63	.625	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANR123B	.75	.75	.750	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANR164D	1.00	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
left hand												
MTANL103B	.63	.63	.625	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANL123B	.75	.75	.750	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANL164D	1.00	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



See pages B66–B74 for inserts.

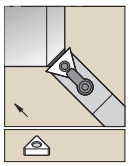


MTAN-S 0°

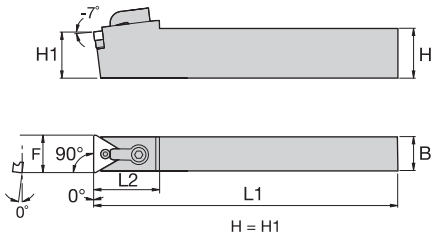





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTANRS123	.75	.75	.750	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANRS163	1.00	1.00	1.000	6.00	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANRS164	1.00	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTANRS854	1.25	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTANRS205	1.25	1.25	1.250	6.00	1.46	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
left hand												
MTANLS123	.75	.75	.750	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANLS163	1.00	1.00	1.000	6.00	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTANLS164	1.00	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTANLS854	1.25	1.00	1.000	6.00	1.21	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTANLS205	1.25	1.25	1.250	6.00	1.46	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32



See pages B66–B74 for inserts.

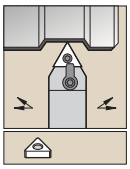


MTCN 0°

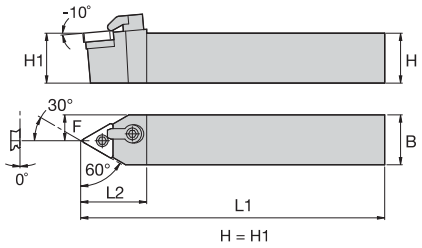





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MTCNN083	.50	.50	.542	4.50	1.13	TN..332	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
MTCNN443	1.00	.50	.542	8.00	1.13	TN..332	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
MTCNN124	.75	.75	.775	6.00	1.43	TN..432	**ITSN433**	**KL46**	3/32	**CK12**	**STC4**	5/32
MTCNN644	1.00	.75	.775	8.00	1.43	TN..432	**ITSN433**	**KL46**	3/32	**CK12**	**STC4**	5/32



See pages B66–B74 for inserts.

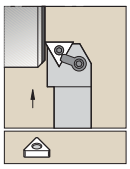


MTEN-S 30°

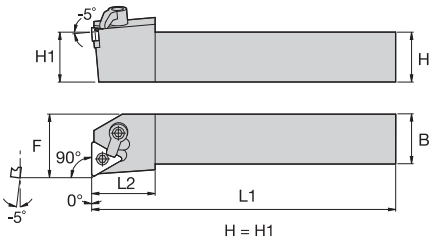





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MTENNS082	.50	.50	.250	4.50	.99	TN..221	**—**	**KL23**	1/16	**CK6**	**STC5**	3/32
MTENNS103	.63	.63	.312	4.50	1.16	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS123	.75	.75	.375	4.50	1.16	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS163	1.00	1.00	.500	5.00	1.16	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTENNS164	1.00	1.00	.500	6.00	1.40	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTENNS854	1.25	1.00	.500	6.00	1.41	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTENNS205	1.25	1.25	.625	6.00	1.64	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTENNS246	1.50	1.50	.750	7.00	1.95	TN..663	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32



See pages B66–B74 for inserts.

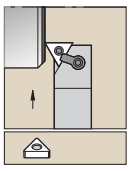


MTFN 0°

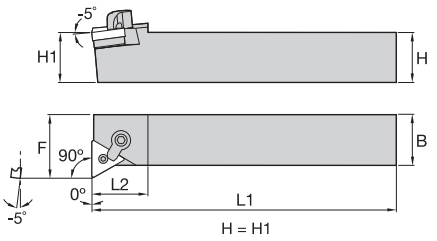





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTFNR123B	.75	.75	1.000	4.50	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNR163C	1.00	1.00	1.250	5.00	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNR124B	.75	.75	1.000	4.50	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNR164C	1.00	1.00	1.250	5.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNR164D	1.00	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNR204D	1.25	1.25	1.500	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNR854D	1.25	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNR205D	1.25	1.25	1.500	6.00	1.43	TN..543	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFNR245D	1.50	1.50	2.000	6.00	1.43	TN..543	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFNR246E	1.50	1.50	2.000	7.00	1.49	TN..663	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32
left hand												
MTFNL103B	.63	.63	.875	4.50	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNL163D	1.00	1.00	1.250	6.00	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNL123B	.75	.75	1.000	4.50	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNL164C	1.00	1.00	1.250	5.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNL164D	1.00	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNL204D	1.25	1.25	1.500	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNL854D	1.25	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTFNL245D	1.50	1.50	2.000	6.00	1.43	TN..543	**ITSN534**	**KL58**	1/8	**CK12**	**STC4**	5/32
MTFNL246E	1.50	1.50	2.000	7.00	1.49	TN..663	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32



See pages B66–B74 for inserts.

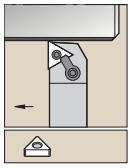


MTFN-S 0°

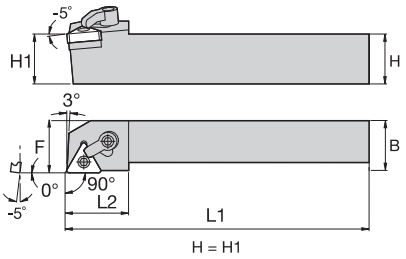





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTFNRS123	.75	.75	1.000	4.50	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNRS164	1.00	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
left hand												
MTFNLS123	.75	.75	1.000	4.50	.94	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTFNLS164	1.00	1.00	1.250	6.00	1.22	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



See pages B66–B74 for inserts.

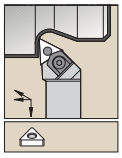


MTGN 0°

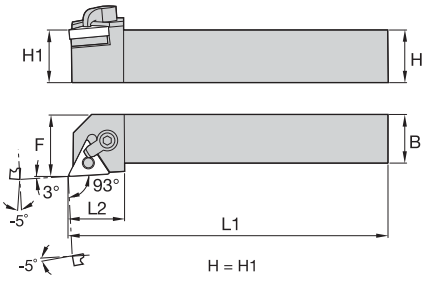





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTGNR082B	.50	.50	.625	4.50	.96	TN..221	—	**KL23**	1/16	**CK19**	**STC9**	3/32
MTGNR103B	.63	.63	.875	4.50	1.12	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNR163C	1.00	1.00	1.250	5.00	1.12	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNR163D	1.00	1.00	1.250	6.00	1.12	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNR123B	.75	.75	1.000	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNR124B	.75	.75	1.000	4.50	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNR164C	1.00	1.00	1.250	5.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNR164D	1.00	1.00	1.250	6.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNR204D	1.25	1.25	1.500	6.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNR165C	1.00	1.00	1.250	5.00	1.38	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTGNR205D	1.25	1.25	1.500	6.00	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
left hand												
MTGNL103B	.63	.63	.875	4.50	1.12	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNL123B	.75	.75	1.000	4.50	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTGNL124B	.75	.75	1.000	4.50	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNL164C	1.00	1.00	1.250	5.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNL164D	1.00	1.00	1.250	6.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK6**	**STC4**	5/32
MTGNL204D	1.25	1.25	1.500	6.00	1.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTGNL205D	1.25	1.25	1.500	6.00	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32



See pages B66–B74 for inserts.



MTJN -3°





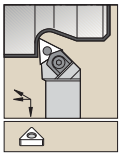

catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTJNR082B	.50	.50	.625	4.50	.72	TN..221	—	**KL23**	1/16	**CK19**	**STC9**	3/32
MTJNR103B	.63	.63	.875	4.50	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNR123B	.75	.75	1.000	4.50	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNR163C	1.00	1.00	1.250	5.00	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNR163D	1.00	1.00	1.250	6.00	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNR164D	1.00	1.00	1.250	6.00	1.12	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNR204D	1.25	1.25	1.500	6.00	1.12	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNR205D	1.25	1.25	1.500	6.00	1.25	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32

(continued)

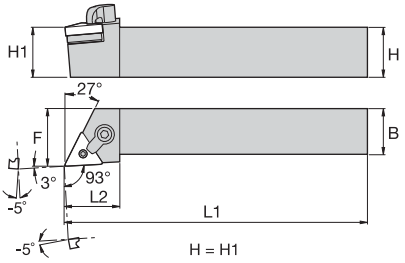
(MTJN -3° continued)



catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
left hand												
MTJNL082B	.50	.50	.625	4.50	.72	TN..221	—	**KL23**	1/16	**CK19**	**STC9**	3/32
MTJNL103B	.63	.63	.875	4.50	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNL123B	.75	.75	1.000	4.50	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNL163C	1.00	1.00	1.250	5.00	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNL163D	1.00	1.00	1.250	6.00	.88	TN..322	**ITSN333**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNL164D	1.00	1.00	1.250	6.00	1.12	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNL204D	1.25	1.25	1.500	6.00	1.12	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNL205D	1.25	1.25	1.500	6.00	1.25	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32



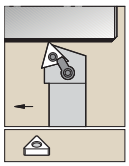
See pages B66–B74 for inserts.



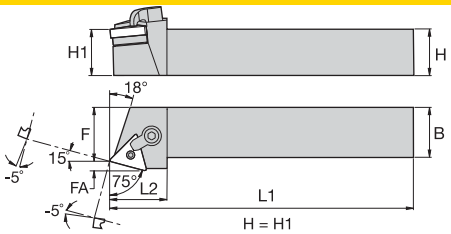
MTJN-S -3°



catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MTJNRS123	.75	.75	1.000	4.500	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNRS163	1.00	1.00	1.250	6.000	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNRS124	.75	.75	1.000	4.500	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNRS204	1.25	1.25	1.250	6.000	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNRS854	1.25	1.00	1.250	6.000	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNRS864	1.50	1.00	1.250	6.000	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNRS164	1.00	1.00	1.250	6.000	1.32	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNRS165	1.00	1.00	1.250	6.000	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJNRS205	1.25	1.25	1.500	6.000	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJNRS246	1.50	1.50	2.000	7.000	1.62	TN..663	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32
left hand												
MTJNLS123	.75	.75	1.000	4.500	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNLS163	1.00	1.00	1.250	6.000	1.12	TN..332	**ITSN323**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MTJNLS124	.75	.75	1.000	4.500	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNLS204	1.25	1.25	1.250	6.000	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNLS864	1.50	1.00	1.250	6.000	1.19	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNLS164	1.00	1.00	1.250	6.000	1.32	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MTJNLS165	1.00	1.00	1.250	6.000	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJNLS205	1.25	1.25	1.500	6.000	1.44	TN..543	**ITSN534**	**KL58**	1/8	**CK9**	**STC4**	5/32
MTJNLS246	1.50	1.50	2.000	7.000	1.62	TN..663	**ITSN636**	**KL68L**	9/64	**CK12**	**STC4**	5/32



See pages B66–B74 for inserts.

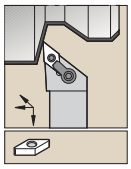


MTRN 15°

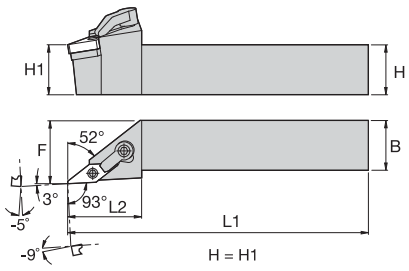





catalog number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MTRNR103B	.63	.63	.722	4.50	1.20	.15	TN..322	**ITSN333**	**KL34L**	5/64	**CK20**	**STC11**	1/8
MTRNR164D	1.00	1.00	1.040	6.00	1.24	.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
left hand													
MTRNL164D	1.00	1.00	1.040	6.00	1.24	.20	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



See pages B74–B78 for inserts.

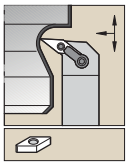


MVJN -3°

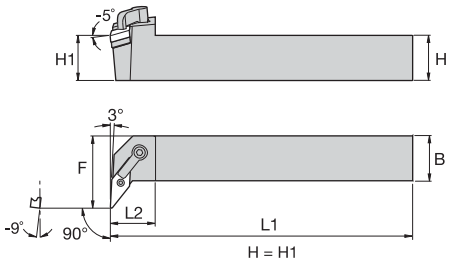





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MVJNR123A	.75	.75	1.000	4.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR123B	.75	.75	1.000	4.50	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR163C	1.00	1.00	1.250	5.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR163D	1.00	1.00	1.250	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR853D	1.25	1.00	1.250	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR203D	1.25	1.25	1.500	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR243D	1.50	1.50	2.000	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNR124B	.75	.75	1.000	4.50	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNR164C	1.00	1.00	1.250	5.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNR164D	1.00	1.00	1.250	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNR204D	1.25	1.25	1.500	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNR244D	1.50	1.50	2.000	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
left hand												
MVJNL123A	.75	.75	1.000	4.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL123B	.75	.75	1.000	4.50	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL163C	1.00	1.00	1.250	5.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL163D	1.00	1.00	1.250	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL853D	1.25	1.00	1.250	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL203D	1.25	1.25	1.500	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL243D	1.50	1.50	2.000	6.00	1.66	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVJNL124B	.75	.75	1.000	4.50	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNL164C	1.00	1.00	1.250	5.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNL164D	1.00	1.00	1.250	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNL204D	1.25	1.25	1.500	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVJNL244D	1.50	1.50	2.000	6.00	2.00	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32



See pages B74–B78 for inserts.

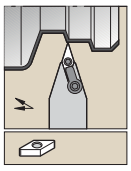


MVUN -3°

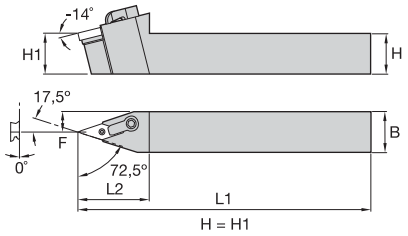





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MVUNR204C	1.25	1.25	2.000	5.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUNR204D	1.25	1.25	2.000	6.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUNR244D	1.50	1.50	2.250	6.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
left hand												
MVUNL204C	1.25	1.25	2.000	5.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUNL204D	1.25	1.25	2.000	6.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVUNL244D	1.50	1.50	2.250	6.00	1.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32



See pages B74–B78 for inserts.

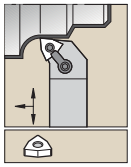


MVVN 17.5°

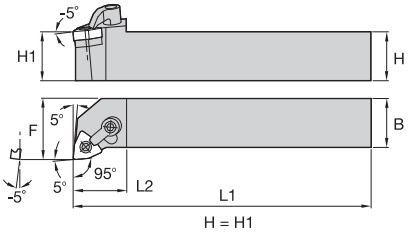





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
MVVNN123B	.75	.75	.375	4.50	1.77	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN163C	1.00	1.00	.500	5.00	1.77	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN163D	1.00	1.00	.500	6.00	1.77	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN853D	1.25	1.00	.500	6.00	1.77	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN203D	1.25	1.25	.625	6.00	1.77	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
MVVNN164D	1.00	1.00	.500	6.00	2.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVVNN204D	1.25	1.25	.625	6.00	2.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
MVVNN244E	1.50	1.50	.750	7.00	2.25	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32



See pages B79–B83 for inserts.

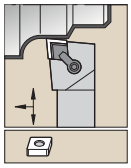


MWLN -5°

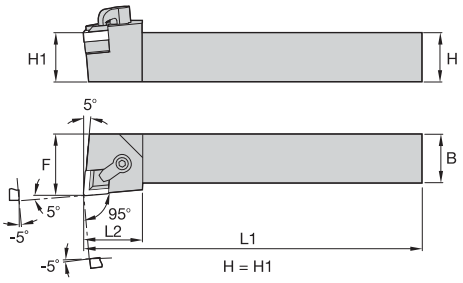





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MWLNR123B	.75	.75	1.000	4.50	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNR163C	1.00	1.00	1.250	5.00	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNR163D	1.00	1.00	1.250	6.00	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNR203D	1.25	1.25	1.500	6.00	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNR124B	.75	.75	1.000	4.50	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
MWLNR164C	1.00	1.00	1.250	5.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNR164D	1.00	1.00	1.250	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNR854D	1.25	1.00	1.250	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNR204D	1.25	1.25	1.500	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNR244D	1.50	1.50	2.000	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
left hand												
MWLNL123B	.75	.75	1.000	4.50	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNL163C	1.00	1.00	1.250	5.00	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNL163D	1.00	1.00	1.250	6.00	1.00	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
MWLNL124B	.75	.75	1.000	4.50	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
MWLNL164C	1.00	1.00	1.250	5.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNL164D	1.00	1.00	1.250	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
MWLNL854D	1.25	1.00	1.250	6.00	1.13	WN..432	**IWSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



See page B118 for inserts.



MCLN-C -5°

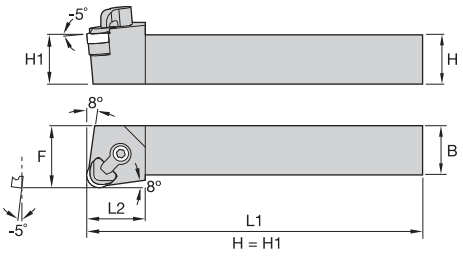





catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MCLNRC164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
left hand												
MCLNLC164D	1.00	1.00	1.250	6.00	1.25	CN..432	**ICSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8



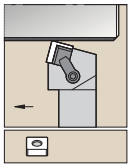
See page B119 for inserts.



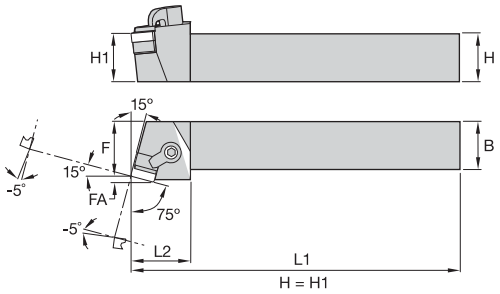
MRGN-C



catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
MRGNRC164D	1.00	1.00	1.250	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGNRC204D	1.25	1.25	1.500	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGNRC244D	1.50	1.50	2.000	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
left hand												
MRGNLC164D	1.00	1.00	1.250	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGNLC204D	1.25	1.25	1.500	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8
MRGNLC244D	1.50	1.50	2.000	6.00	1.25	RN..43	**IRSN44**	**KL46L**	3/32	**CK21**	**STC20**	1/8



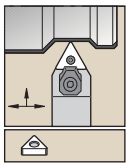
See page B120 for inserts.



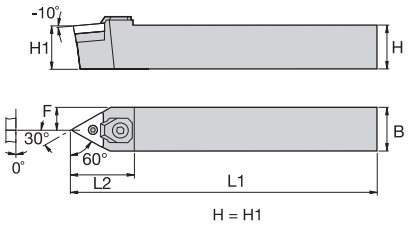
MSRN-C 15°



catalog number	H	B	F	L1	L2	FA	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
MSRNRC164D	1.00	1.00	1.130	6.00	1.25	.12	SN..432	**ISSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8
left hand													
MSRNLC164D	1.00	1.00	1.130	6.00	1.25	.12	SN..432	**ISSN442**	**KL46L**	3/32	**CK21**	**STC20**	1/8



See pages B66–B73 for inserts.



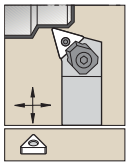
WTEN 30°



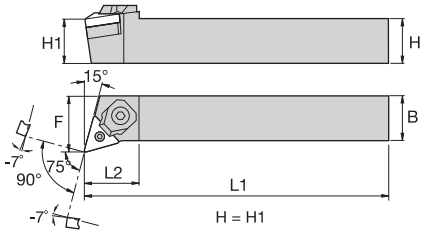




catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	retaining ring	clamp screw	hex (inch)
WTENNS164	1.00	1.00	.500	6.00	1.38	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
WTENNS205	1.25	1.25	.625	6.00	1.63	TN..543	**SM370**	**FPE6**	3/32	**WC6**	—	—	5/32 & 3/16



See pages B66–B73 for inserts.



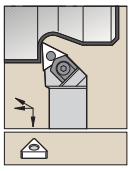
WTIN -15°



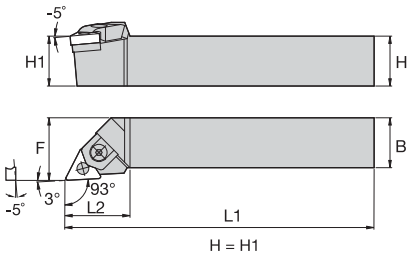




catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	retaining ring	clamp screw	hex (inch)
right hand													
WTINRS164	1.00	1.00	1.250	6.00	1.25	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
WTINRS205	1.25	1.25	1.500	6.00	1.50	TN..543	**SM370**	**FPE6**	3/32	**WC6**	—	—	5/32 & 3/16
left hand													
WTINLS164	1.00	1.00	1.250	6.00	1.25	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
WTINLS205	1.25	1.25	1.500	6.00	1.50	TN..543	**SM370**	**FPE6**	3/32	**WC6**	—	—	5/32 & 3/16



See pages B66–B73 for inserts.



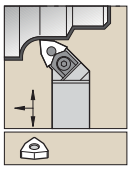
WTJN -3°



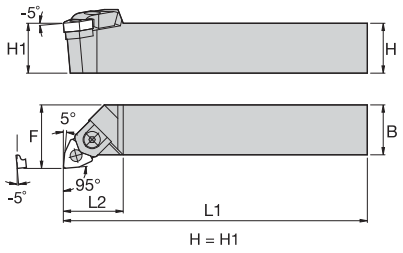




catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	hex (inch)	clamp	retaining ring	clamp screw	hex (inch)
right hand													
WTJNRS164	1.00	1.00	1.250	6.00	1.38	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
WTJNRS854	1.25	1.00	1.250	6.00	1.38	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
left hand													
WTJNLS164	1.00	1.00	1.250	6.00	1.38	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8
WTJNLS854	1.25	1.00	1.250	6.00	1.38	TN..432	**SM391**	**FPE5**	1/16 & 3/32	**WC5**	**RR5144-21**	**S986**	5/32 & 1/8



See pages B79–B83 for inserts.



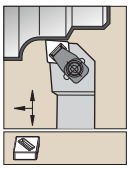
WWLN -5 °



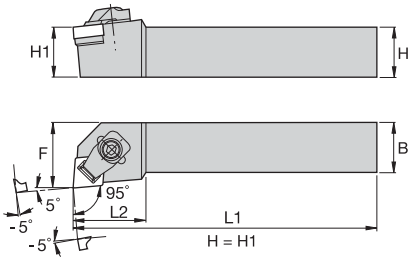




catalog number	H	B	F	L1	L2	gage insert	shim	lock pin	Torx	clamp	clamp screw	E-Clip	Torx
right hand													
WWLNR124	.75	.75	1.000	4.50	1.25	WN..432	**SM443**	**FP453**	T10	**MWW4**	**MS1372**	**E147**	T25
WWLNR164	1.00	1.00	1.250	6.00	1.25	WN..432	**SM443**	**FP477**	T10	**MWW4**	**MS1372**	**E147**	T25
left hand													
WWLNL164	1.00	1.00	1.250	6.00	1.25	WN..432	**SM443**	**FP477**	T10	**MWW4**	**MS1372**	**E147**	T25



See page B122 for inserts.

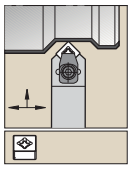


CCLN-MX -5°

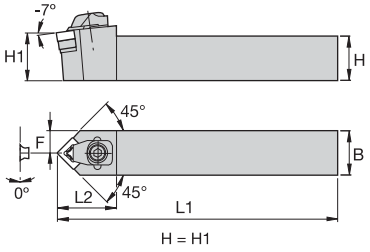




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand											
CCLNR164DMX5	1.00	1.00	1.250	6.00	1.25	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
CCLNR204DMX5	1.25	1.25	1.500	6.00	1.25	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
left hand											
CCLNL164DMX5	1.00	1.00	1.250	6.00	1.25	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
CCLNL204DMX5	1.25	1.25	1.500	6.00	1.25	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
CCLNL245DMX5	1.50	1.50	2.000	6.00	1.38	CN.X553	**552.223**	**554.261**	T25	**551.342**	T25



See pages B125–B126 for inserts.

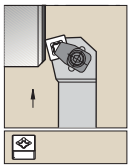


CSDN-MX 45°

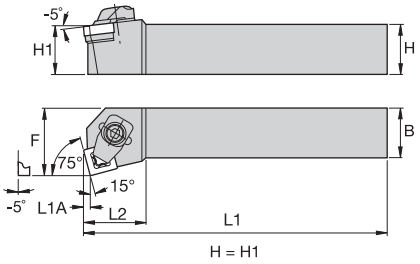




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx
CSDNN164DMX5	1.00	1.00	.500	6.00	1.38	SN.X452	**552.232**	**554.260**	T20	**551.326**	T25



See pages B125–B126 for inserts.

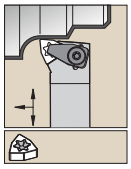


CSKN-MX 15°

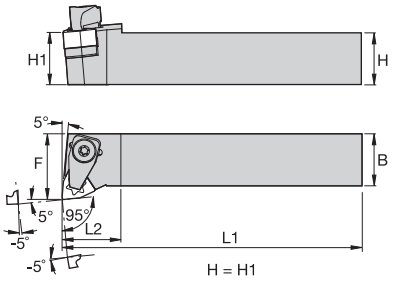




catalog number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand												
CSKNR164DMX5	1.00	1.00	1.250	6.00	1.06	.12	SN.X452	**552.232**	**554.260**	T20	**551.326**	T25
left hand												
CSKNL164DMX5	1.00	1.00	1.250	6.00	1.06	.12	SN.X452	**552.232**	**554.260**	T20	**551.326**	T25
CSKNL204DMX5	1.25	1.25	1.500	6.00	1.06	.12	SN.X452	**552.232**	**554.260**	T20	**551.326**	T25



See page B127 for inserts.

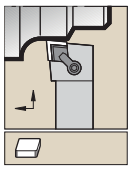


CWLN-MX -5°

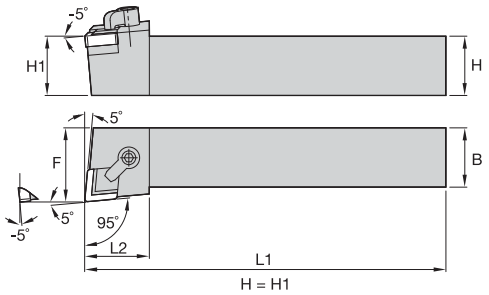




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand											
CWLNR164DMX5	1.00	1.00	1.250	6.00	1.12	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25
CWLNR204DMX5	1.25	1.25	1.500	6.00	1.12	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25
left hand											
CWLNL164DMX5	1.00	1.00	1.250	6.00	1.12	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25
CWLNL204DMX5	1.25	1.25	1.500	6.00	1.12	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25



See page B122 for inserts.

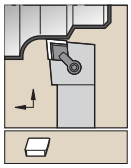


CCLN -5°

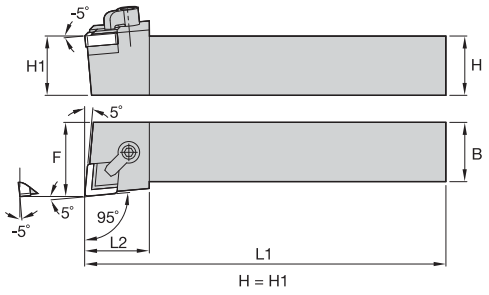





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand **CCLNR164**	1.00	1.00	1.250	6.00	1.00	CN.422	**SM396**	**S111**	1/16	**CK21**	**STC20**	1/8
left hand **CCLNL164**	1.00	1.00	1.250	6.00	1.00	CN.422	**SM396**	**S111**	1/16	**CK21**	**STC20**	1/8



See page B122 for inserts.

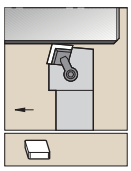


CCLN-P -5°

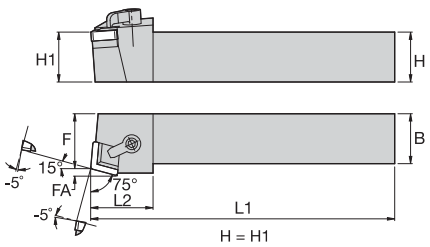





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	clamp	clamp screw	hex (inch)
right hand **CCLNRP163D**	1.00	1.00	1.250	6.00	1.25	CN.322	**SM432**	**SL344**	**CK20**	**STC11**	1/8
left hand **CCLNLP163D**	1.00	1.00	1.250	6.00	1.25	CN.322	**SM432**	**SL344**	**CK20**	**STC11**	1/8



See page B122 for inserts.

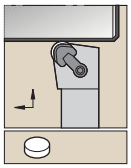


CCRN-P 15°

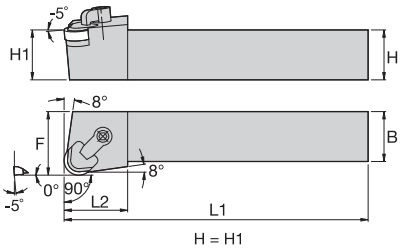





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	clamp	clamp screw	hex (inch)
right hand **CCRNRP163D**	1.00	1.00	1.161	6.00	1.25	.09	CN.322	**SM432**	**SL344**	**CK20**	**STC11**	1/8



See page B124 for inserts.

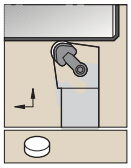


CRGN

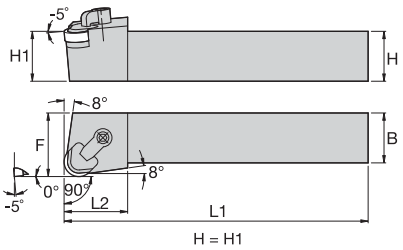





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CRGNR123	.75	.75	.875	4.50	.75	RN.32	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGNR163	1.00	1.00	1.125	6.00	.75	RN.32	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGNR164	1.00	1.00	1.125	6.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNR854	1.25	1.00	1.125	6.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNR864	1.50	1.00	1.125	8.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNR244F	1.50	1.50	2.000	8.00	1.25	RNG45	**SM45**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNR206	1.25	1.25	1.500	6.00	1.38	RNG65	**SM456**	**SL344**	–	**CK12**	**STC4**	5/32
CRGNR246	1.50	1.50	2.000	8.00	1.38	RNG65	**SM456**	**SL344**	–	**CK12**	**STC4**	5/32
CRGNR208	1.25	1.25	1.500	6.00	1.56	RNG84	**SM444**	**SL344**	–	**CK24**	**STC19**	3/16
CRGNR248	1.50	1.50	2.000	8.00	1.56	RNG84	**SM444**	**SL344**	–	**CK24**	**STC19**	3/16
left hand												
CRGNL123	.75	.75	.875	4.50	.75	RN.32	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGNL163	1.00	1.00	1.125	6.00	.75	RN.32	**SM46**	**S111**	1/16	**CK6**	**STC5**	3/32
CRGNL164	1.00	1.00	1.125	6.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNL854	1.25	1.00	1.125	6.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNL864	1.50	1.00	1.125	8.00	1.00	RN.42	**SM218**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNL244F	1.50	1.50	2.000	8.00	1.25	RNG45	**SM45**	**S111**	1/16	**CK12**	**STC4**	5/32
CRGNL206	1.25	1.25	1.500	6.00	1.38	RNG65	**SM456**	**SL344**	–	**CK12**	**STC4**	5/32
CRGNL246	1.50	1.50	2.000	8.00	1.38	RNG65	**SM456**	**SL344**	–	**CK12**	**STC4**	5/32
CRGNL208	1.25	1.25	1.500	6.00	1.56	RNG84	**SM444**	**SL344**	–	**CK24**	**STC19**	3/16
CRGNL248	1.50	1.50	2.000	8.00	1.56	RNG84	**SM444**	**SL344**	–	**CK24**	**STC19**	3/16



See page B124 for inserts.

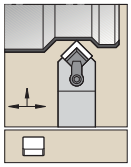


CRGN-P

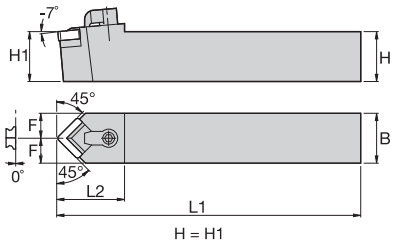





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	clamp	clamp screw	hex (inch)
right hand											
CRGNRP163D	1.00	1.00	1.250	6.00	.75	RNM32	**SM434**	**SL344**	**CK20**	**STC20**	1/8
CRGNRP164D	1.00	1.00	1.250	6.00	1.13	RN.42	**SM437**	**SL344**	**CK28**	**STC4**	5/32
CRGNRP204D	1.25	1.25	1.500	6.00	1.13	RN.42	**SM437**	**SL344**	**CK28**	**STC4**	5/32
left hand											
CRGNLP163D	1.00	1.00	1.250	6.00	.75	RNM32	**SM434**	**SL344**	**CK20**	**STC20**	1/8
CRGNLP164D	1.00	1.00	1.250	6.00	1.13	RN.42	**SM437**	**SL344**	**CK28**	**STC4**	5/32
CRGNLP204D	1.25	1.25	1.500	6.00	1.13	RN.42	**SM437**	**SL344**	**CK28**	**STC4**	5/32



See pages B125–B126 for inserts.

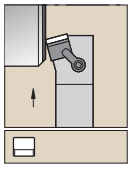


CSDN 45°

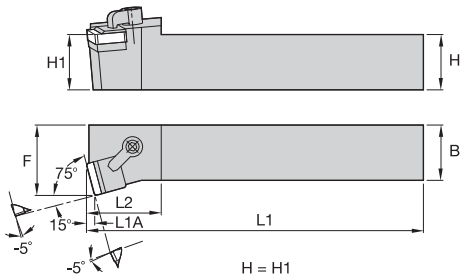





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
CSDNN124	.75	.75	.375	4.50	1.31	SN.422	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSDNN164	1.00	1.00	.500	6.00	1.31	SN.422	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDNN866	1.50	1.00	.500	8.00	1.75	SN.633	**SM216**	**S125**	3/32	**CK24**	**STC19**	3/16



See pages B125–B126 for inserts.

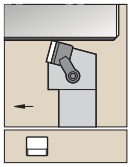


CSKN 15°

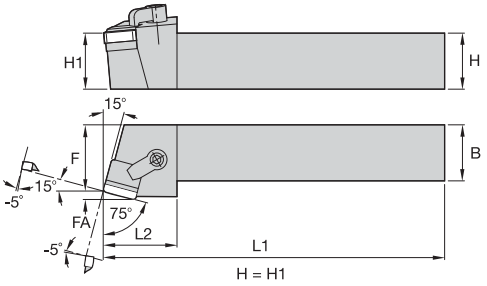





catalog number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CSKNR123	.75	.75	.830	4.50	.88	.09	SN.322	**SM87**	**SL344**	—	**CK7**	**STC5**	3/32
CSKNR856	1.25	1.00	1.190	6.00	1.50	.18	SN.633	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32



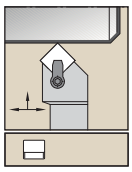
See pages B125–B126 for inserts.



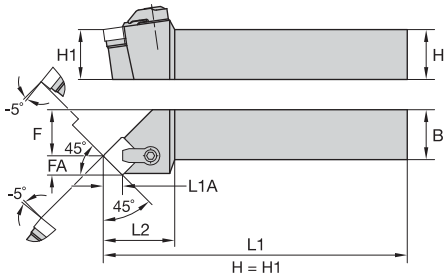
CSRN 15°



catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CSRNR124	.75	.75	.855	4.50	1.19	.12	SN.422	**SM47**	**S111**	1/16	**CK10**	**STC4**	5/32
CSRNR164	1.00	1.00	1.048	6.00	1.19	.12	SN.422	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRNR856	1.25	1.00	1.060	6.00	1.44	.18	SN.633	**SM216**	**S125**	3/32	**CK9**	**STC4**	5/32



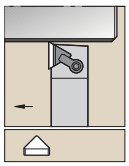
See pages B125–B126 for inserts.



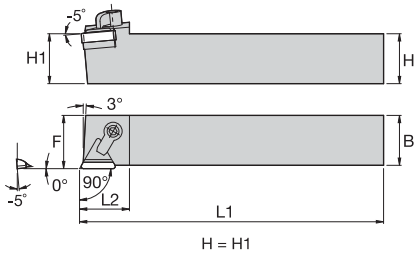
CSSN 45°



catalog number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
CSSNR164	1.00	1.00	.720	6.00	1.31	.34	.33	SN.422	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32
left hand														
CSSNL164	1.00	1.00	.720	6.00	1.31	.34	.33	SN.422	**SM47**	**S111**	1/16	**CK9**	**STC4**	5/32



See page B126 for inserts.

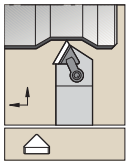


CTAN 0°

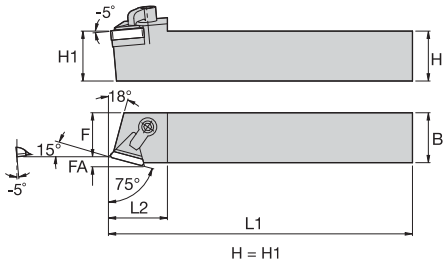





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTANR082	.50	.50	.50	4.500	.75	TN.221	**SM88**	**SL344**	—	**CK19**	**STC5**	3/32
CTANR123	.75	.75	.75	4.500	1.06	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTANR164	1.00	1.00	1.00	6.000	1.19	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand												
CTANL164	1.00	1.00	1.00	6.000	1.19	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32



See page B126 for inserts.

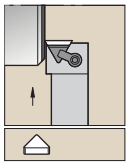


CTBN 15°

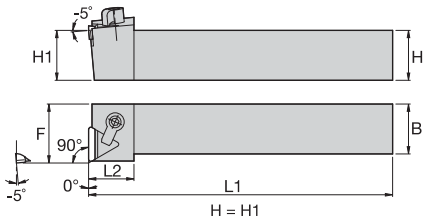





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CTBNR123	.75	.75	.600	4.50	1.19	.15	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTBNR204	1.25	1.25	1.040	6.00	1.25	.20	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTBNR864	1.50	1.00	.790	8.00	1.25	.20	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand													
CTBNL123	.75	.75	.600	4.50	1.19	.15	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTBNL204	1.25	1.25	1.040	6.00	1.25	.20	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32



See page B126 for inserts.



CTFN 0°



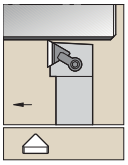



catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTFNR123	.75	.75	1.000	4.50	.88	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTFNR853	1.25	1.00	1.250	6.00	.88	TN.322	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32

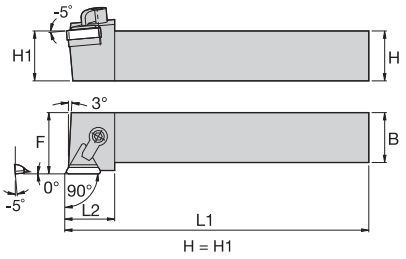
(continued)

(CTFN 0° continued)

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
left hand												
CTFNL123	.75	.75	1.000	4.50	.88	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTFNL163	1.00	1.00	1.250	6.00	.88	TN.322	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32

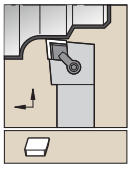


See page B126 for inserts.

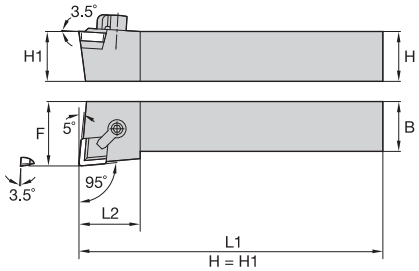


CTGN 0°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTGNR123	.75	.75	1.000	4.50	1.00	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTGNR163	1.00	1.00	1.250	6.00	1.00	TN.322	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGNR164	1.00	1.00	1.250	6.00	1.19	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGNR204	1.25	1.25	1.500	6.00	1.19	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand												
CTGNL123	.75	.75	1.000	4.50	1.00	TN.322	**SM48**	**S111**	1/16	**CK10**	**STC4**	5/32
CTGNL163	1.00	1.00	1.250	6.00	1.00	TN.322	**SM48**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGNL164	1.00	1.00	1.250	6.00	1.19	TN.432	**SM26**	**S125**	3/32	**CK9**	**STC4**	5/32

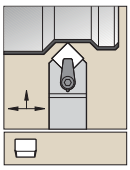


See page B84 for inserts.

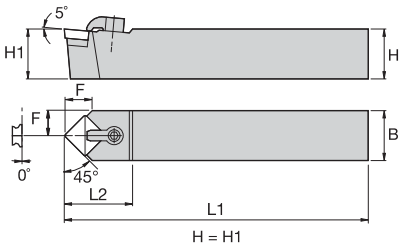


CCLP -5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CCLPR084V	.50	.50	.750	3.50	1.00	CP.422	**SM369**	**S19**	1/16	**CK7**	**STC9**	3/32
CCLPR124B	.75	.75	1.000	4.50	1.25	CP.422	**SM369**	**S111**	1/16	**CK13**	**STC8**	5/32
CCLPR164C	1.00	1.00	1.250	5.00	1.25	CP.422	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32
CCLPR164D	1.00	1.00	1.250	6.00	1.25	CP.422	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32
left hand												
CCLPL124B	.75	.75	1.000	4.50	1.25	CP.422	**SM369**	**S111**	1/16	**CK13**	**STC8**	5/32
CCLPL164C	1.00	1.00	1.250	5.00	1.25	CP.422	**SM369**	**S111**	1/16	**CK12**	**STC4**	5/32



See pages B85–B86 and B129–B130 for inserts.

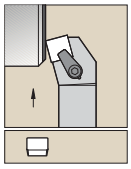


CSDP 45°

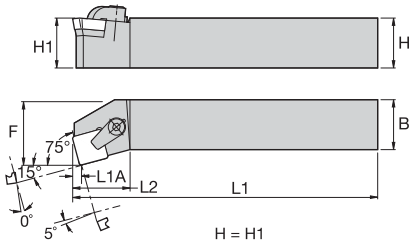





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
CSDPN103	.63	.63	.312	4.50	.94	SP.322	**SM120**	**SL344**	—	**CK7**	**STC5**	3/32
CSDPN124	.75	.75	.375	4.50	1.38	SP.422	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSDPN644	1.00	.75	.375	6.00	1.38	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDPN164	1.00	1.00	.500	6.00	1.38	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSDPN856	1.25	1.00	.500	6.00	1.82	SP.633	**SM36**	**S125**	3/32	**CK29**	**STC19**	3/16



See pages B85–B86 and B129–B130 for inserts.

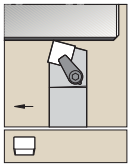


CSKP 15°

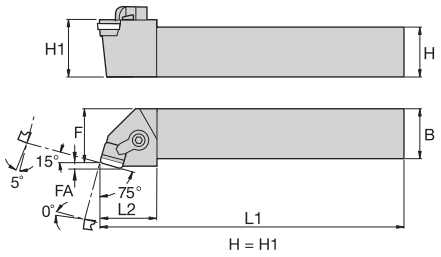





catalog number	H	B	F	L1	L2	L1A	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand **CSKPR164D**	1.00	1.00	1.250	6.00	1.13	.12	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
left hand **CSKPL164D**	1.00	1.00	1.250	6.00	1.13	.12	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32



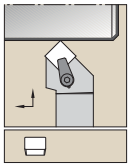
See pages B85–B86 and B129–B130 for inserts.



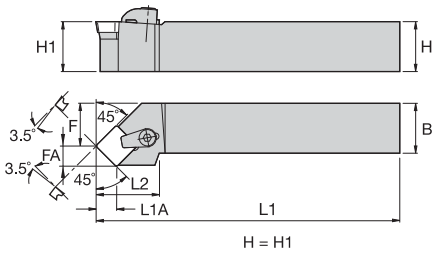
CSRP 15°



catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CSRPR083B	.50	.50	.605	4.50	.88	.09	SP.322	**SM120**	**SL344**	—	**CK7**	**STC9**	3/32
CSRPR124B	.75	.75	.855	4.50	1.19	.12	SP.422	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSRPR164D	1.00	1.00	1.048	6.00	1.19	.12	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRPR856D	1.25	1.00	1.060	6.00	1.50	.18	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRPR866E	1.50	1.00	1.060	7.00	1.50	.18	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand													
CSRPL083B	.50	.50	.605	4.50	.88	.09	SP.322	**SM120**	**SL344**	—	**CK7**	**STC9**	3/32
CSRPL124B	.75	.75	.855	4.50	1.19	.12	SP.422	**SM40**	**S111**	1/16	**CK10**	**STC8**	5/32
CSRPL164D	1.00	1.00	1.048	6.00	1.19	.12	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSRPL856D	1.25	1.00	1.060	6.00	1.50	.18	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
CSRPL866E	1.50	1.00	1.060	7.00	1.50	.18	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32



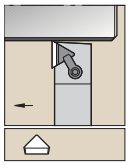
See pages B85–B86 and B129–B130 for inserts.



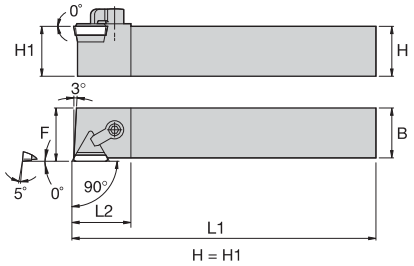
CSSP 45°



catalog number	H	B	F	L1	L2	FA	L1A	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
CSSPR164D	1.00	1.00	1.170	6.00	1.44	.34	.35	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSPR854D	1.25	1.00	1.170	6.00	1.44	.34	.35	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSPR856D	1.25	1.00	1.020	6.00	1.50	.48	.53	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand														
CSSPL164D	1.00	1.00	1.170	6.00	1.44	.34	.35	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSPL854D	1.25	1.00	1.170	6.00	1.44	.34	.35	SP.422	**SM40**	**S111**	1/16	**CK9**	**STC4**	5/32
CSSPL856D	1.25	1.00	1.020	6.00	1.50	.48	.53	SP.633	**SM36**	**S125**	3/32	**CK9**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

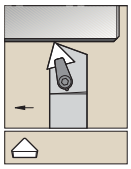


CTAP 0°

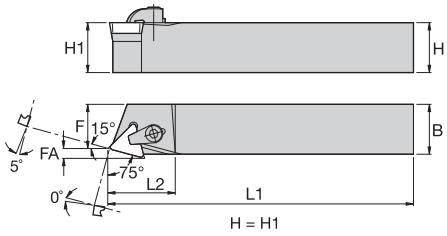





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTAPR082B	.50	.50	.500	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTAPR102B	.63	.63	.625	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC5**	3/32
CTAPR123B	.75	.75	.750	4.50	1.06	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTAPR163D	1.00	1.00	1.000	6.00	1.06	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTAPR854D	1.25	1.00	1.000	6.00	1.13	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand												
CTAPL082B	.50	.50	.500	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTAPL123B	.75	.75	.750	4.50	1.06	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTAPL163D	1.00	1.00	1.000	6.00	1.06	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTAPL854D	1.25	1.00	1.000	6.00	1.13	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

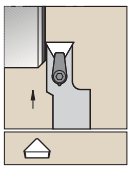


CTBP 15°

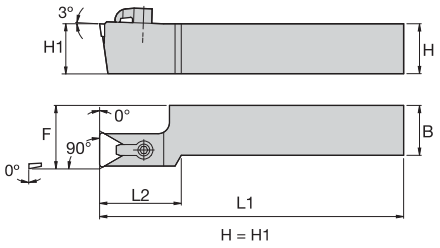





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CTBPR123B	.75	.75	.600	4.50	1.19	.15	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTBPR163D	1.00	1.00	.850	6.00	1.19	.15	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
left hand													
CTBPL123B	.75	.75	.600	4.50	1.19	.15	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTBPL163D	1.00	1.00	.850	6.00	1.19	.15	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

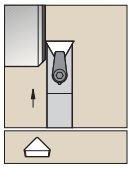


CTCP 0°

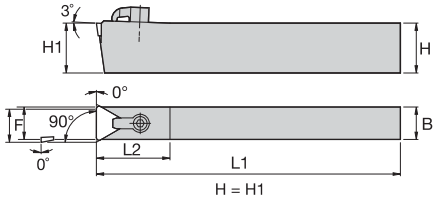





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTCPR123B	.75	.75	1.000	4.50	1.50	TP.322	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPR163C	1.00	1.00	1.250	5.00	1.50	TP.322	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPR164C	1.00	1.00	1.250	5.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPR164D	1.00	1.00	1.250	6.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPR204D	1.25	1.25	1.500	6.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPR244D	1.50	1.50	2.000	6.00	3.00	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPR205D	1.25	1.25	1.500	6.00	1.75	TP.543	**SM99**	**S132**	1/8	**CK29**	**STC19**	3/16
left hand												
CTCPL123B	.75	.75	1.000	4.50	1.50	TP.322	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPL163C	1.00	1.00	1.250	5.00	1.50	TP.322	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPL164C	1.00	1.00	1.250	5.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPL164D	1.00	1.00	1.250	6.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPL204D	1.25	1.25	1.500	6.00	1.63	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPL244D	1.50	1.50	2.000	6.00	3.00	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPL205D	1.25	1.25	1.500	6.00	1.75	TP.543	**SM99**	**S132**	1/8	**CK29**	**STC19**	3/16



See pages B86–B87 and B130 for inserts.

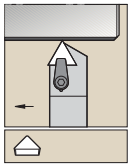


CTCPN 0°

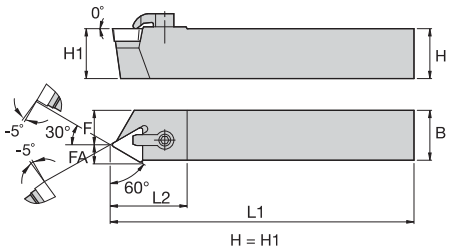





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
CTCPN443	1.00	.50	.542	8.00	1.19	TP.322	**SM41**	**S111**	1/16	**CK23**	**STC11**	1/8
CTCPN124	.75	.75	.782	6.00	1.31	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC8**	5/32
CTCPN644	1.00	.75	.782	8.00	1.31	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32
CTCPN664	1.50	.75	.782	8.00	1.31	TP.432	**SM37**	**S125**	3/32	**CK13**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

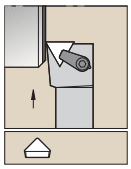


CTEP 30°

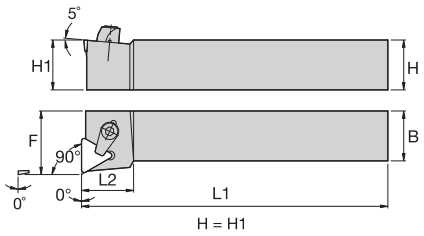





catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
CTEPR102B	.63	.63	.450	4.50	.88	.20	TP.221	**SM119**	**SL344**	—	**CK19**	**STC5**	3/32
CTEPR123B	.75	.75	.460	4.50	1.25	.28	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTEPR163D	1.00	1.00	.700	6.00	1.25	.28	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTEPR854D	1.25	1.00	.610	6.00	1.31	.39	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand													
CTEPL102B	.63	.63	.450	4.50	.88	.20	TP.221	**SM119**	**SL344**	—	**CK19**	**STC5**	3/32
CTEPL123B	.75	.75	.460	4.50	1.25	.28	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTEPL163D	1.00	1.00	.700	6.00	1.25	.28	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTEPL854D	1.25	1.00	.610	6.00	1.31	.39	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

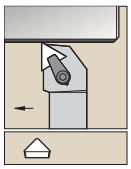


CTFP 0°

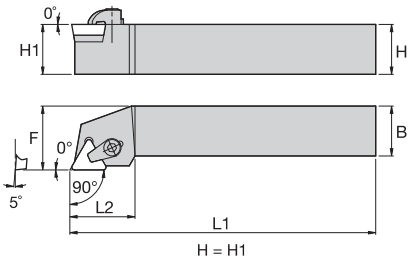





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTFPR082V	.50	.50	.750	3.50	.56	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTFPR123B	.75	.75	1.000	4.50	1.13	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTFPR163C	1.00	1.00	1.250	5.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFPR163D	1.00	1.00	1.250	6.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFPR164C	1.00	1.00	1.250	5.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFPR164D	1.00	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFPR854D	1.25	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFPR204D	1.25	1.25	1.500	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand												
CTFPL082V	.50	.50	.750	3.50	.56	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTFPL123B	.75	.75	1.000	4.50	1.13	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTFPL163D	1.00	1.00	1.250	6.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTFPL164D	1.00	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFPL854D	1.25	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTFPL204D	1.25	1.25	1.500	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32



See pages B86–B87 and B130 for inserts.

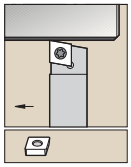


CTGP 0°

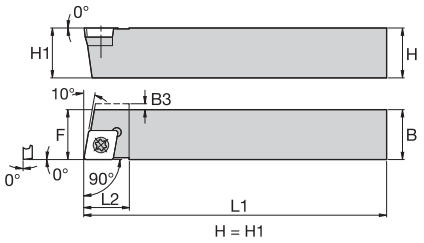





catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
CTGPR082B	.50	.50	.750	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTGPR102B	.63	.63	.875	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTGPR123A	.75	.75	1.000	4.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTGPR123B	.75	.75	1.000	4.50	1.13	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTGPR163C	1.00	1.00	1.250	5.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGPR163D	1.00	1.00	1.250	6.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGPR164C	1.00	1.00	1.250	5.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR164D	1.00	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR854D	1.25	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR204D	1.25	1.25	1.500	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPR205D	1.25	1.25	1.500	6.00	1.38	TP.543	**SM99**	**S132**	1/8	**CK24**	**STC19**	3/16
left hand												
CTGPL102B	.63	.63	.875	4.50	.75	TP.221	**SM119**	**SL344**	—	**CK19**	**STC9**	3/32
CTGPL123B	.75	.75	1.000	4.50	1.13	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
CTGPL163C	1.00	1.00	1.250	5.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGPL163D	1.00	1.00	1.250	6.00	1.13	TP.322	**SM41**	**S111**	1/16	**CK9**	**STC4**	5/32
CTGPL164C	1.00	1.00	1.250	5.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPL164D	1.00	1.00	1.250	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPL204D	1.25	1.25	1.500	6.00	1.25	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
CTGPL205D	1.25	1.25	1.500	6.00	1.38	TP.543	**SM99**	**S132**	1/8	**CK24**	**STC19**	3/16

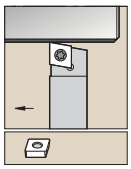


See pages B88–B91 for inserts.

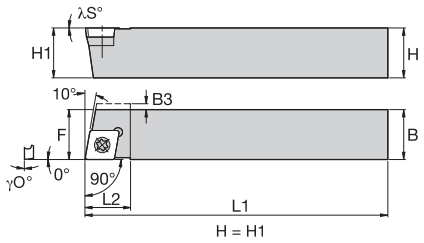


SCAC 0°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCACR052D	.31	.31	.312	6.00	.44	.09	CC..2151	–	–	–	**MS1153**	T7
SCACR062D	.38	.38	.375	6.00	.44	–	CC..2151	–	–	–	**MS1153**	T7
SCACR083D	.50	.50	.500	6.00	.62	–	CC..3252	–	–	–	**MS1155**	T15
SCACR103B	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SCACL052D	.31	.31	.312	6.00	.44	.09	CC..2151	–	–	–	**MS1153**	T7
SCACL062D	.38	.38	.375	6.00	.44	–	CC..2151	–	–	–	**MS1153**	T7
SCACL083D	.50	.50	.500	6.00	.62	–	CC..3252	–	–	–	**MS1155**	T15
SCACL103B	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15

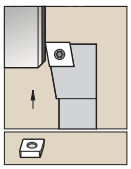


See pages B92–B95 for inserts.

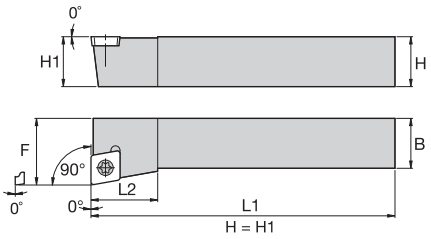


SCAP 0°

catalog number	H	B	F	L1	L2	γO°	λS°	B3	gage insert	insert screw	Torx
right hand											
SCAPR052D	.31	.31	.312	6.000	.44	3.50	3.50	.06	CP..2151	**MS1153**	T7
SCAPR062D	.38	.38	.375	6.000	.44	3.50	3.50	–	CP..2151	**MS1153**	T7
SCAPR083D	.50	.50	.500	6.000	.62	3.00	4.00	–	CP..3252	**MS1027**	T9
left hand											
SCAPL052D	.31	.31	.312	6.000	.44	3.50	3.50	.06	CP..2151	**MS1153**	T7
SCAPL062D	.38	.38	.375	6.000	.44	3.50	3.50	–	CP..2151	**MS1153**	T7
SCAPL083D	.50	.50	.500	6.000	.62	3.00	4.00	–	CP..3252	**MS1027**	T9

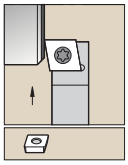


See pages B88–B91 for inserts.

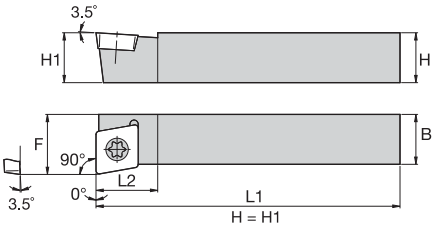


SCFC 0°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCFCR082	.50	.50	.625	3.50	.50	CC..2151	**MS1153**	T7
left hand								
SCFCL082	.50	.50	.625	3.50	.50	CC..2151	**MS1153**	T7



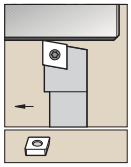
See pages B92–B95 for inserts.



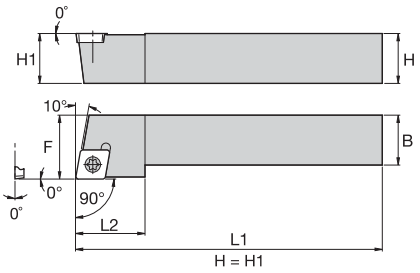
SCFP 0°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCFPR062	.38	.38	.500	2.50	.44	CP..2151	**MS1153**	T7
SCFPR083V	.50	.50	.625	3.50	.62	CP..3252	**MS1027**	T9
left hand								
SCFPL083V	.50	.50	.625	3.50	.62	CP..3252	**MS1027**	T9

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

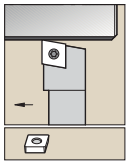


See pages B88–B91 for inserts.

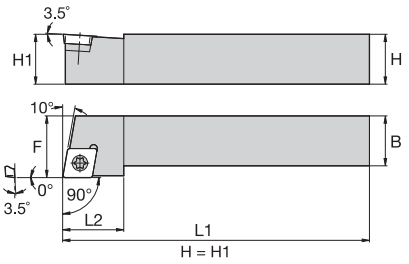


SCGC 0°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SCGCR062	.38	.38	.500	2.50	.50	CC..2151	**–**	**–**	–	**MS1153**	T7
SCGCR082	.50	.50	.625	3.50	.50	CC..2151	**–**	**–**	–	**MS1153**	T7
SCGCR102	.63	.63	.750	4.00	.50	CC..2151	**–**	**–**	–	**MS1153**	T7
SCGCR103	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCGCR123	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCGCR163	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SCGCL103	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCGCL123	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCGCL163	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15



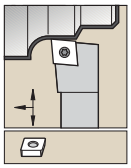
See pages B92–B95 for inserts.



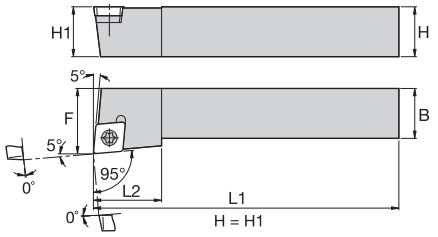
SCGP 0°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SCGPR062	.38	.38	.500	2.50	.44	CP..2151	**–**	**–**	–	**MS1153**	T7
SCGPR083V	.50	.50	.625	3.50	.62	CP..3252	**–**	**–**	–	**MS1027**	T9
SCGPR123B	.75	.75	1.000	4.50	.62	CP..3252	**SM417**	**MS1028**	3/32 IN	**MS1027**	T9
left hand											
SCGPL062	.38	.38	.500	2.50	.44	CP..2151	**–**	**–**	–	**MS1153**	T7
SCGPL083V	.50	.50	.625	3.50	.62	CP..3252	**–**	**–**	–	**MS1027**	T9
SCGPL123B	.75	.75	1.000	4.50	.62	CP..3252	**SM417**	**MS1028**	3/32 IN	**MS1027**	T9

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

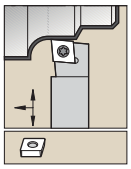


See pages B88–B91 for inserts.

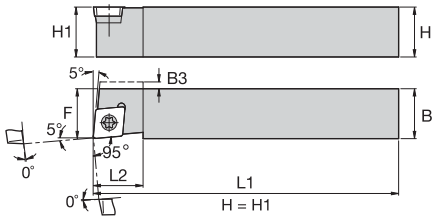


SCLC -5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SCLCR052	.31	.31	.375	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCR062	.38	.38	.500	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCR082	.50	.50	.625	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCR102	.63	.63	.750	4.00	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCR103	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR123	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR163	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCR124B	.75	.75	1.000	4.50	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
SCLCR164D	1.00	1.00	1.250	6.00	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
left hand											
SCLCL052	.31	.31	.375	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCL062	.38	.38	.500	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCL082	.50	.50	.625	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCL102	.63	.63	.750	4.00	.50	CC..2151	–	–	–	**MS1153**	T7
SCLCL103	.63	.63	.750	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL123	.75	.75	1.000	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL163	1.00	1.00	1.250	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCLCL124B	.75	.75	1.000	4.50	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15
SCLCL164D	1.00	1.00	1.250	6.00	.75	CC..432	**SKCP453**	**SRS4**	4 mm	**MS1158**	T15

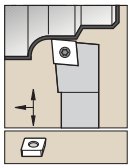


See pages B88–B91 for inserts.

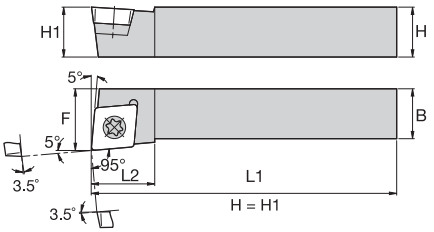


SCLC-F -5°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCLCRF062D	.38	.38	.375	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
SCLCRF082D	.50	.50	.500	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
SCLCRF083D	.50	.50	.500	6.00	.62	.09	CC..3252	–	–	–	**MS1155**	T15
SCLCRF523Z	.50	.63	.625	3.25	.62	–	CC..3252	–	–	–	**MS1155**	T15
SCLCRF103B	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SCLCLF062D	.38	.38	.375	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
SCLCLF082D	.50	.50	.500	6.00	.50	–	CC..2151	–	–	–	**MS1153**	T7
SCLCLF083D	.50	.50	.500	6.00	.62	.09	CC..3252	–	–	–	**MS1155**	T15
SCLCLF523Z	.50	.63	.625	3.25	.62	–	CC..3252	–	–	–	**MS1155**	T15
SCLCLF103B	.63	.63	.625	4.50	.62	–	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15



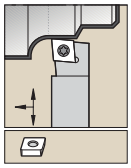
See pages B92–B95 for inserts.



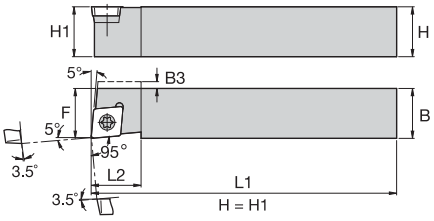
SCLP -5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SCLPR062	.38	.38	.500	2.50	.44	CP..2151	–	–	–	**MS1153**	T7
SCLPR083V	.50	.50	.625	3.50	.62	CP..3252	–	–	–	**MS1027**	T9
SCLPR123B	.75	.75	1.000	4.50	.62	CP..3252	**SM417**	**MS1028**	3/32 IN	**MS1027**	T9
left hand											
SCLPL062	.38	.38	.500	2.50	.44	CP..2151	–	–	–	**MS1153**	T7
SCLPL083V	.50	.50	.625	3.50	.62	CP..3252	–	–	–	**MS1027**	T9
SCLPL123B	.75	.75	1.000	4.50	.62	CP..3252	**SM417**	**MS1028**	3/32 IN	**MS1027**	T9

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



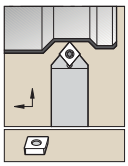
See pages B92–B95 for inserts.



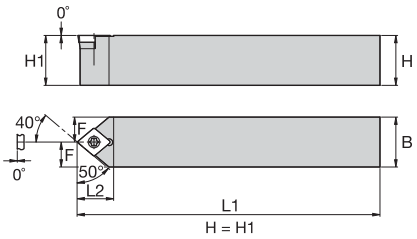
SCLP-F -5°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SCLPRF062D	.38	.38	.375	6.00	.44	CP..2151	**MS1153**	T7
SCLPRF083D	.50	.50	.500	6.00	.62	CP..3252	**MS1027**	T9
left hand								
SCLPLF062D	.38	.38	.375	6.00	.44	CP..2151	**MS1153**	T7
SCLPLF083D	.50	.50	.500	6.00	.62	CP..3252	**MS1027**	T9

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



See pages B88–B91 for inserts.

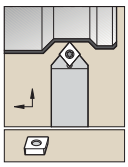


SCMC 40°

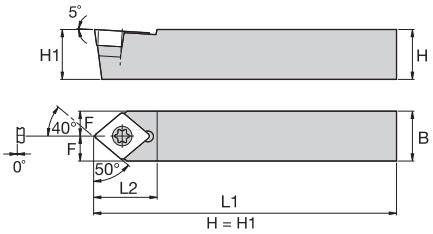




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SCMCN062	.38	.38	.188	2.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCMCN082	.50	.50	.250	3.50	.50	CC..2151	–	–	–	**MS1153**	T7
SCMCN083	.50	.50	.250	3.50	.62	CC..3252	–	–	–	**MS1155**	T15
SCMCN103	.63	.63	.312	4.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCMCN123	.75	.75	.375	4.50	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
SCMCN163	1.00	1.00	.500	6.00	.62	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15



See pages B92–B95 for inserts.



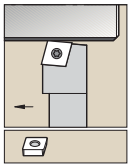
SCMP 40°



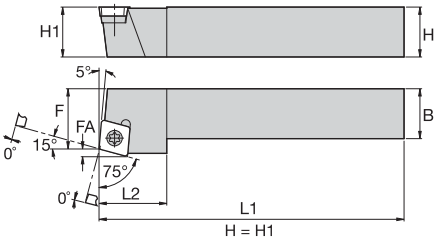


catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SCMPN062	.38	.38	.188	2.50	.44	CP..2151	–	–	–	**MS1153**	T7
SCMPN083V	.50	.50	.250	3.50	.62	CP..3252	–	–	–	**MS1027**	T9
SCMPN123B	.75	.75	.375	4.50	.75	CP..3252	**SM417**	**MS1028**	3/32 IN	**MS1027**	T9

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



See pages B88–B91 for inserts.

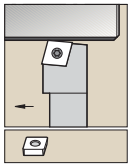


SCRC 15°

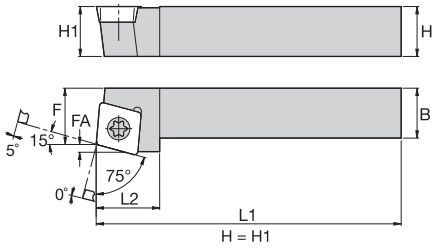




catalog number	H	B	F	L1	L2	FA	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SCRCR083	.50	.50	.548	3.50	.62	.09	CC..3252	–	–	–	**MS1155**	T15
SCRCR103	.63	.63	.673	4.00	.62	.09	CC..3252	**SKCP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SCRCL083	.50	.50	.548	3.50	.62	.09	CC..3252	–	–	–	**MS1155**	T15



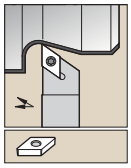
See pages B92–B95 for inserts.



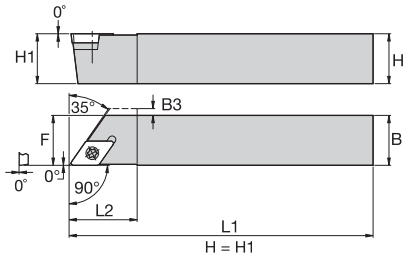
SCRP 15°

catalog number	H	B	F	L1	L2	FA	gage insert	insert screw	Torx
right hand									
SCRPR062	.38	.38	.439	2.50	.44	.06	CP..2151	**MS1153**	T7
SCRPR083V	.50	.50	.537	3.50	.62	.09	CP..3252	**MS1027**	T9
left hand									
SCRPL062	.38	.38	.439	2.50	.44	.06	CP..2151	**MS1153**	T7
SCRPL083V	.50	.50	.537	3.50	.62	.09	CP..3252	**MS1027**	T9

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

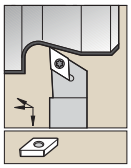


See pages B95–B98 for inserts.

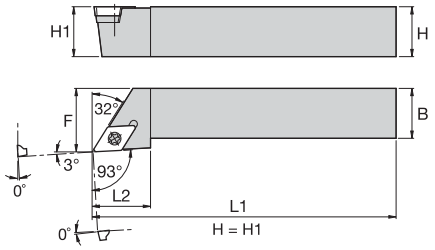


SDAC 0°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SDACR062D	.38	.38	.375	6.00	.62	—	DC..2151	—	—	—	**MS1153**	T7
SDACR082D	.50	.50	.500	6.00	.62	—	DC..2151	—	—	—	**MS1153**	T7
SDACR103B	.63	.63	.625	4.50	.88	—	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDACR083D	.50	.50	.500	6.00	.88	.06	DC..3252	—	—	—	**MS1155**	T15
left hand												
SDACL062D	.38	.38	.375	6.00	.62	—	DC..2151	—	—	—	**MS1153**	T7
SDACL082D	.50	.50	.500	6.00	.62	—	DC..2151	—	—	—	**MS1153**	T7
SDACL103B	.63	.63	.625	4.50	.88	—	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDACL083D	.50	.50	.500	6.00	.88	.06	DC..3252	—	—	—	**MS1155**	T15



See pages B95–B98 for inserts.

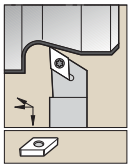


SDJC -3°

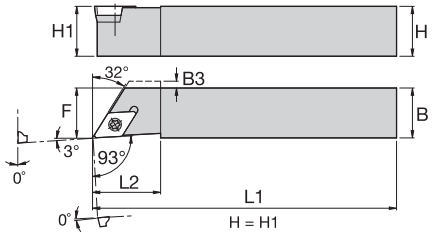




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SDJCR062	.38	.38	.500	2.50	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCR082	.50	.50	.625	3.50	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCR102	.63	.63	.750	4.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCR083	.50	.50	.625	3.50	.88	DC..3252	–	–	–	**MS1155**	T15
SDJCR103	.63	.63	.750	4.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCR123	.75	.75	1.000	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCR163	1.00	1.00	1.250	6.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SDJCL062	.38	.38	.500	2.50	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCL082	.50	.50	.625	3.50	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCL102	.63	.63	.750	4.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCL083	.50	.50	.625	3.50	.88	DC..3252	–	–	–	**MS1155**	T15
SDJCL103	.63	.63	.750	4.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCL123	.75	.75	1.000	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCL163	1.00	1.00	1.250	6.00	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15



See pages B95–B98 for inserts.

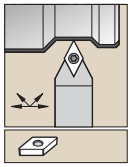


SDJC-F -3°

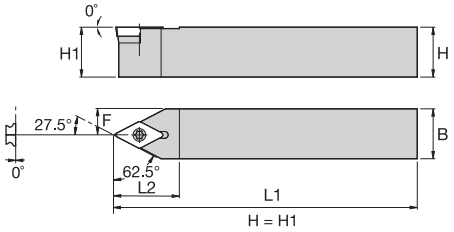




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SDJCRF062D	.38	.38	.375	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCRF082D	.50	.50	.500	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCRF103B	.63	.63	.625	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCRF083D	.50	.50	.500	6.00	.88	DC..3252	–	–	–	**MS1155**	T15
left hand											
SDJCLF062D	.38	.38	.375	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCLF082D	.50	.50	.500	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDJCLF103B	.63	.63	.625	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDJCLF083D	.50	.50	.500	6.00	.88	DC..3252	–	–	–	**MS1155**	T15

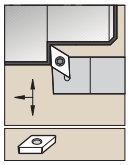


See pages B95–B98 for inserts.

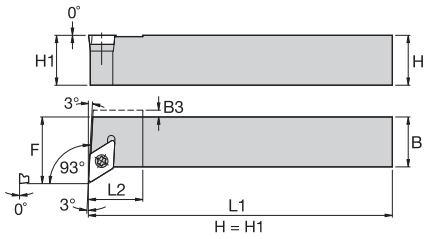


SDPC 27.5°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
SDPCN062D	.38	.38	.188	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDPCN082D	.50	.50	.250	6.00	.62	DC..2151	–	–	–	**MS1153**	T7
SDPCN103B	.63	.63	.312	4.50	.88	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
SDPCN083D	.50	.50	.250	6.00	.88	DC..3252	–	–	–	**MS1155**	T15

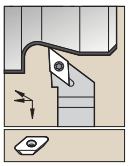


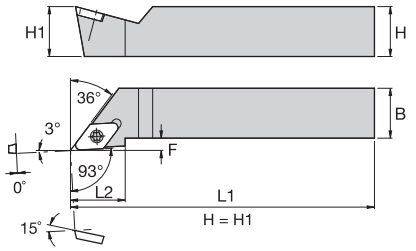
See pages B95–B98 for inserts.



SDUC -3°

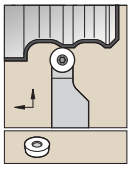
catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
SDUCR082	.50	.50	.670	3.50	.50	–	DC..2151	–	–	–	**MS1153**	T7
SDUCR102	.63	.63	.795	4.00	.50	–	DC..2151	–	–	–	**MS1153**	T7
SDUCR083	.50	.50	.746	3.50	.62	.12	DC..3252	–	–	–	**MS1155**	T15
SDUCR103	.63	.63	.871	4.00	.62	–	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
SDUCL082	.50	.50	.670	3.50	.50	–	DC..2151	–	–	–	**MS1153**	T7
SDUCL102	.63	.63	.795	4.00	.50	–	DC..2151	–	–	–	**MS1153**	T7
SDUCL083	.50	.50	.746	3.50	.62	.12	DC..3252	–	–	–	**MS1155**	T15
SDUCL103	.63	.63	.871	4.00	.62	–	DC..3252	**SKDP343**	**SRS3**	3.5 mm	**MS1156**	T15



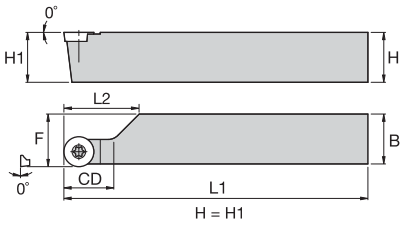


SFJF-S -3°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SFJFRA855S	1.25	1.00	.250	7.00	1.25	FF..210430R	**MS1129**	T15
left hand								
SFJFLA855S	1.25	1.00	.250	7.00	1.25	FF..210430L	**MS1129**	T15

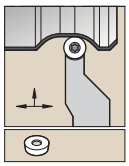


See pages B100–B102 for inserts.

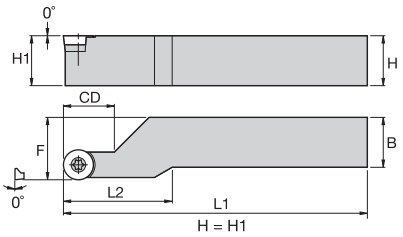


SRAC

catalog number	H	B	F	L1	L2	CD	gage insert	shim	insert screw	Torx
right hand										
SRACR162D	1.00	1.00	1.020	6.00	1.00	1.00	RC..215	–	**MS1153**	T7
SRACR202D	1.25	1.25	1.270	6.00	1.00	1.00	RC..215	–	**MS1153**	T7
SRACR163D	1.00	1.00	1.020	6.00	1.00	1.00	RC..325	**SR3**	**MS1156**	T15
SRACR203D	1.25	1.25	1.270	6.00	1.00	1.00	RC..325	**SR3**	**MS1156**	T15
SRACR164D	1.00	1.00	1.020	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15
SRACR204D	1.25	1.25	1.270	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15
SRACR244D	1.50	1.50	1.520	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15
left hand										
SRACL162D	1.00	1.00	1.020	6.00	1.00	1.00	RC..215	–	**MS1153**	T7
SRACL202D	1.25	1.25	1.270	6.00	1.00	1.00	RC..215	–	**MS1153**	T7
SRACL163D	1.00	1.00	1.020	6.00	1.00	1.00	RC..325	**SR3**	**MS1156**	T15
SRACL203D	1.25	1.25	1.270	6.00	1.00	1.00	RC..325	**SR3**	**MS1156**	T15
SRACL164D	1.00	1.00	1.020	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15
SRACL204D	1.25	1.25	1.270	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15
SRACL244D	1.50	1.50	1.520	6.00	1.00	1.00	RC..43	**SR4**	**MS1158**	T15

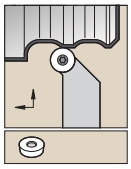


See pages B100–B102 for inserts.

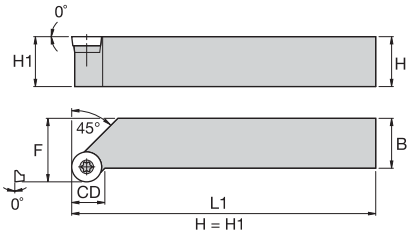


SRCC

catalog number	CD	H	B	F	L1	L2	gage insert	shim	insert screw	Torx
right hand										
SRCCR122B	.81	.75	.75	1.00	4.50	1.66	RC..215	**–**	**MS1153**	T7
SRCCR162D	.81	1.00	1.00	1.25	6.00	1.66	RC..215	**–**	**MS1153**	T7
SRCCR123B	1.02	.75	.75	1.00	4.50	1.88	RC..325	**SR3**	**MS1156**	T15
SRCCR163D	1.02	1.00	1.00	1.25	6.00	1.88	RC..325	**SR3**	**MS1156**	T15
SRCCR203D	1.02	1.25	1.25	1.50	6.00	1.88	RC..325	**SR3**	**MS1156**	T15
left hand										
SRCCL162D	.81	1.00	1.00	1.25	6.00	1.66	RC..215	**–**	**MS1153**	T7
SRCCL123B	1.02	.75	.75	1.00	4.50	1.88	RC..325	**SR3**	**MS1156**	T15
SRCCL163D	1.02	1.00	1.00	1.25	6.00	1.88	RC..325	**SR3**	**MS1156**	T15
SRCCL203D	1.02	1.25	1.25	1.50	6.00	1.88	RC..325	**SR3**	**MS1156**	T15

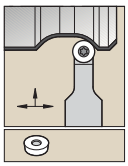


See pages B100–B102 for inserts.

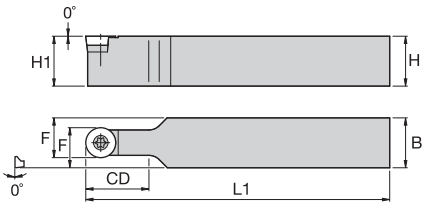


SRGC

catalog number	H	B	F	L1	CD	gage insert	shim	insert screw	Torx
right hand									
SRGCR122	.75	.75	1.000	4.50	.40	RC..215	**–**	**MS1153**	T7
SRGCR162	1.00	1.00	1.250	6.00	.40	RC..215	**–**	**MS1153**	T7
SRGCR163	1.00	1.00	1.250	6.00	.41	RC..325	**SR3**	**MS1156**	T15
SRGCR203	1.25	1.25	1.500	6.00	.43	RC..325	**SR3**	**MS1156**	T15
left hand									
SRGCL162	1.00	1.00	1.250	6.00	.40	RC..215	**–**	**MS1153**	T7
SRGCL203	1.25	1.25	1.500	6.00	.43	RC..325	**SR3**	**MS1156**	T15

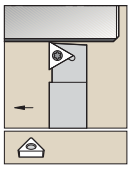


See pages B100–B102 for inserts.

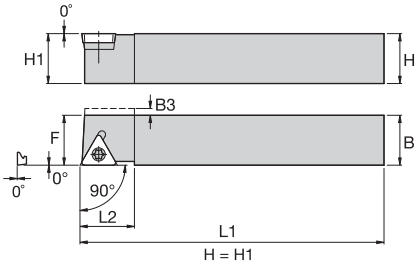


SROC

catalog number	H	B	F	L1	CD	gage insert	shim	insert screw	Torx
SROCN102	.63	.63	.438	4.00	.62	RC..215	**–**	**MS1153**	T7
SROCN122	.75	.75	.500	4.50	.75	RC..215	**–**	**MS1153**	T7
SROCN162	1.00	1.00	.625	6.00	1.00	RC..215	**–**	**MS1153**	T7
SROCN123	.75	.75	.562	4.50	.75	RC..325	**SR3**	**MS1156**	T15
SROCN163	1.00	1.00	.688	6.00	1.00	RC..325	**SR3**	**MS1156**	T15
SROCN203	1.25	1.25	.812	6.00	1.25	RC..325	**SR3**	**MS1156**	T15

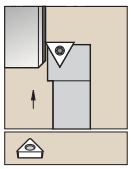


See pages B105–B108 for inserts.

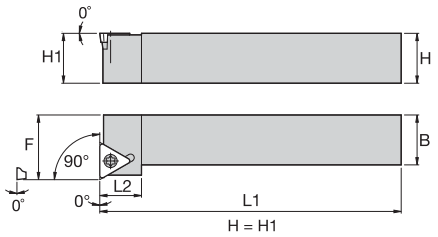


STAC 0°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
STACR062D	.38	.38	.375	6.00	.62	.09	TC..2151	**–**	**–**	–	**MS1153**	T7
STACR082D	.50	.50	.500	6.00	.62	–	TC..2151	**–**	**–**	–	**MS1153**	T7
STACR103B	.63	.63	.625	4.50	.75	–	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
STACL082D	.50	.50	.500	6.00	.62	–	TC..2151	**–**	**–**	–	**MS1153**	T7
STACL103B	.63	.63	.625	4.50	.75	–	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15

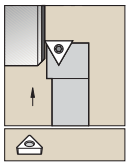


See pages B105–B108 for inserts.

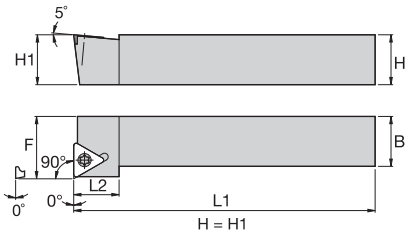


STFC 0°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
STFCR062	.38	.38	.500	2.50	.62	TC..2151	–	–	–	**MS1153**	T7
STFCR163	1.00	1.00	1.250	6.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
STFCL062	.38	.38	.500	2.50	.62	TC..2151	–	–	–	**MS1153**	T7
STFCL123	.75	.75	1.000	4.50	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STFCL163	1.00	1.00	1.250	6.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15



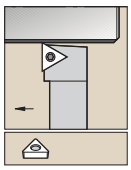
See pages B109–B112 for inserts.



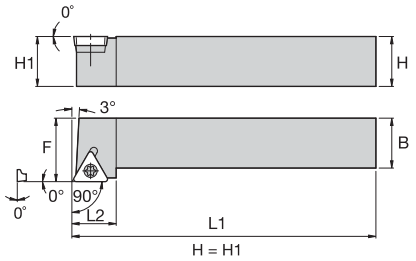
STFP 0°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
STFPR062	.38	.38	.500	2.50	.44	TP..2151	**MS1153**	T7
left hand								
STFPL062	.38	.38	.500	2.50	.44	TP..2151	**MS1153**	T7

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



See pages B105–B108 for inserts.



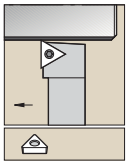
STGC 0°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
STGCR062	.38	.38	.500	2.50	.62	TC..2151	–	–	–	**MS1153**	T7
STGCR082	.50	.50	.625	3.50	.62	TC..2151	–	–	–	**MS1153**	T7
STGCR103	.63	.63	.750	4.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCR123	.75	.75	1.000	4.50	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCR163	1.00	1.00	1.250	6.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15

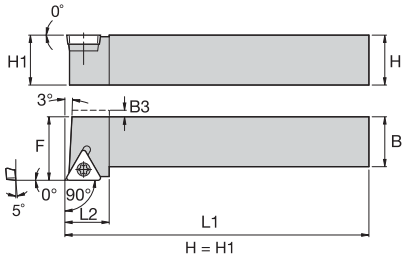
(continued)

(STGC 0° continued)

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
left hand											
STGCL062	.38	.38	.500	2.50	.62	TC..2151	–	–	–	**MS1153**	T7
STGCL082	.50	.50	.625	3.50	.62	TC..2151	–	–	–	**MS1153**	T7
STGCL103	.63	.63	.750	4.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCL123	.75	.75	1.000	4.50	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
STGCL163	1.00	1.00	1.250	6.00	.75	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15



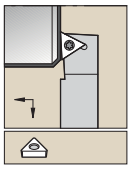
See pages B109–B112 for inserts.



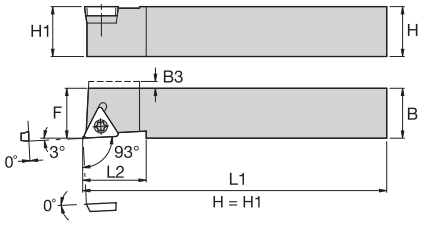
STGP 0°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
STGPR062	.38	.38	.500	2.50	.56	TP..2151	**MS1153**	T7
STGPR082V	.50	.50	.625	3.50	.56	TP..2151	**MS1153**	T7
left hand								
STGPL062	.38	.38	.500	2.50	.56	TP..2151	**MS1153**	T7
STGPL082V	.50	.50	.625	3.50	.56	TP..2151	**MS1153**	T7

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

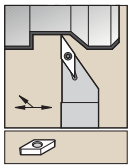


See pages B105–B108 for inserts.

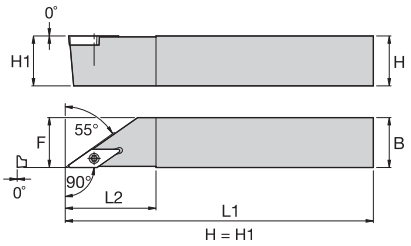


STJC-F -3°

catalog number	H	B	F	L1	L2	B3	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
STJCRF062D	.38	.38	.375	6.00	.62	.09	TC..2151	–	–	–	**MS1153**	T7
STJCRF082D	.50	.50	.500	6.00	.62	–	TC..2151	–	–	–	**MS1153**	T7
STJCRF102B	.63	.63	.625	4.50	.62	–	TC..2151	–	–	–	**MS1153**	T7
STJCRF103B	.63	.63	.625	4.50	.75	–	TC..3252	**SKTP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand												
STJCLF062D	.38	.38	.375	6.00	.62	.09	TC..2151	–	–	–	**MS1153**	T7

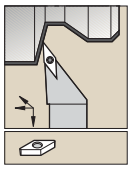


See pages B113–B114 for inserts.

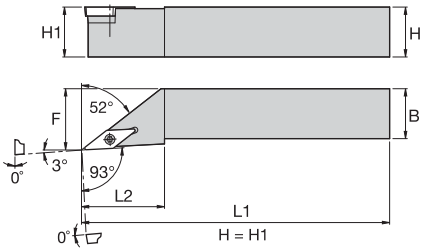


SVAB -0°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SVABR062D	.38	.38	.375	6.00	.88	VB..221	**MS1153**	T7
SVABR082D	.50	.50	.500	6.00	.88	VB..221	**MS1153**	T7
SVABR103B	.63	.63	.625	4.50	1.38	VB..332	**MS1155**	T15
left hand								
SVABL062D	.38	.38	.375	6.00	.88	VB..221	**MS1153**	T7
SVABL082D	.50	.50	.500	6.00	.88	VB..221	**MS1153**	T7
SVABL103B	.63	.63	.625	4.50	1.38	VB..332	**MS1155**	T15

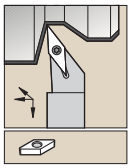


See pages B113–B114 for inserts.

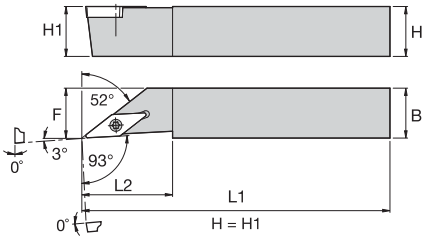


SVJB -3°

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SVJBR062	.38	.38	.500	2.50	.88	VB..221	–	–	–	**MS1153**	T7
SVJBR082	.50	.50	.625	3.50	.88	VB..221	–	–	–	**MS1153**	T7
SVJBR102	.63	.63	.750	4.00	.88	VB..221	–	–	–	**MS1153**	T7
SVJBR123	.75	.75	1.000	4.50	1.38	VB..332	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBR163	1.00	1.00	1.250	6.00	1.38	VB..332	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SVJBL062	.38	.38	.500	2.50	.88	VB..221	–	–	–	**MS1153**	T7
SVJBL082	.50	.50	.625	3.50	.88	VB..221	–	–	–	**MS1153**	T7
SVJBL102	.63	.63	.750	4.00	.88	VB..221	–	–	–	**MS1153**	T7
SVJBL123	.75	.75	1.000	4.50	1.38	VB..332	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15
SVJBL163	1.00	1.00	1.250	6.00	1.38	VB..332	**SKVN343**	**SRS3**	3.5 mm	**MS1156**	T15

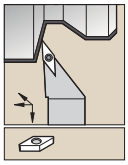


See pages B113–B114 for inserts.

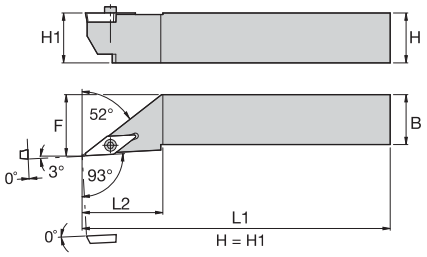


SVJB-F -3°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SVJBRF062D	.38	.38	.375	6.00	.94	VB..221	**MS1153**	T7
SVJBRF082D	.50	.50	.500	6.00	.94	VB..221	**MS1153**	T7
SVJBRF103B	.63	.63	.625	4.50	1.44	VB..332	**MS1155**	T15
left hand								
SVJBLF062D	.38	.38	.375	6.00	.94	VB..221	**MS1153**	T7
SVJBLF082D	.50	.50	.500	6.00	.94	VB..221	**MS1153**	T7
SVJBLF103B	.63	.63	.625	4.50	1.44	VB..332	**MS1155**	T15

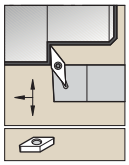


See pages B113–B114 for inserts.

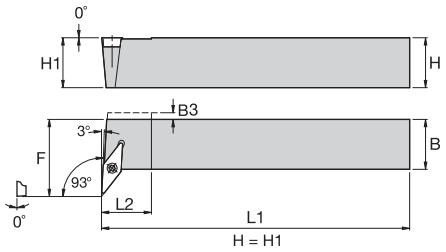


SVJP-W -3°

catalog number	H	B	F	L1	L2	gage insert	insert screw	hex
right hand								
SVJPR164EW	1.00	1.00	1.250	7.00	1.62	VP..443	**S411**	5/32
left hand								
SVJPL164EW	1.00	1.00	1.250	7.00	1.62	VP..443	**S411**	5/32

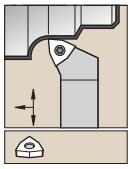


See pages B113–B114 for inserts.

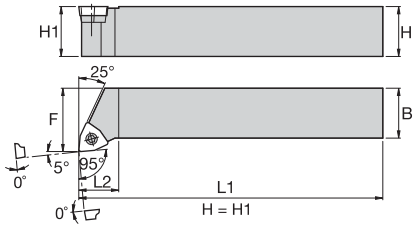


SVUB -3°

catalog number	H	B	F	L1	L2	B3	gage insert	insert screw	Torx
right hand									
SVUBR082	.50	.50	.830	3.50	.50	.12	VB..221	**MS1153**	T7
SVUBR102	.63	.63	.955	4.00	.50	—	VB..221	**MS1153**	T7
left hand									
SVUBL082	.50	.50	.830	3.50	.50	.12	VB..221	**MS1153**	T7
SVUBL102	.63	.63	.955	4.00	.50	—	VB..221	**MS1153**	T7

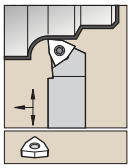


See pages B114–B115 for inserts.

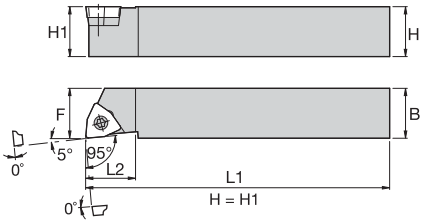


SWLC -5°

catalog number	H	B	F	L1	L2	gage insert	insert screw	Torx
right hand								
SWLCR082	.50	.50	.625	3.50	.50	WC..2151	**MS1153**	T7
SWLCR102	.63	.63	.750	4.00	.50	WC..2151	**MS1153**	T7
left hand								
SWLCL082	.50	.50	.625	3.50	.50	WC..2151	**MS1153**	T7
SWLCL102	.63	.63	.750	4.00	.50	WC..2151	**MS1153**	T7



See pages B114–B115 for inserts.

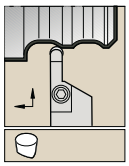


SWLC-F -5°

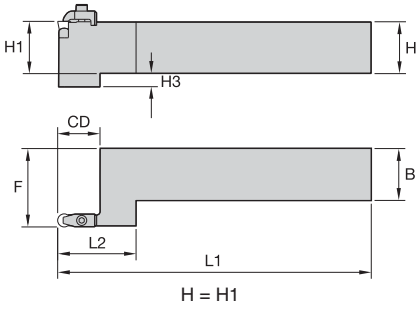




catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	hex	insert screw	Torx
right hand											
SWLCRF082D	.50	.50	.500	6.00	.50	WC..2151	–	–	–	**MS1153**	T7
SWLCRF103B	.63	.63	.625	4.50	.62	WC..3252	**SKWP343**	**SRS3**	3.5 mm	**MS1156**	T15
left hand											
SWLCLF082D	.50	.50	.500	6.00	.50	WC..2151	–	–	–	**MS1153**	T7
SWLCLF103B	.63	.63	.625	4.50	.62	WC..3252	**SKWP343**	**SRS3**	3.5 mm	**MS1156**	T15



See pages B128–B129 for inserts.



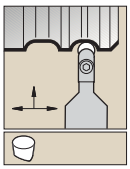
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411-VRS

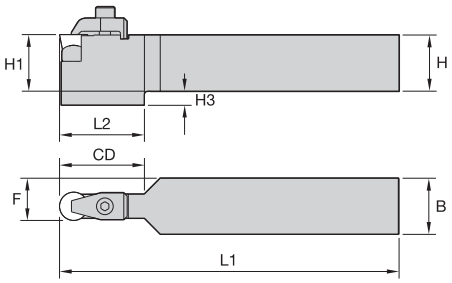




catalog number	H	B	F	L1	L2	CD	H3	gage insert	nest	clamp	clamp screw	hex
right hand												
4111492VRS	1.00	1.00	1.500	6.00	1.50	.75	.25	R..V23	**NST1**	**CM214**	**MS1321**	2.5 mm
4111573VRS	1.00	1.00	1.000	6.00	1.19	1.13	.25	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
4111593VRS	1.25	1.25	1.250	6.00	1.19	1.13	—	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
4111613VRS	1.50	1.50	1.500	6.00	1.19	1.10	—	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
4111654VRS	1.00	1.00	1.000	6.00	1.56	1.50	.25	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
4111674VRS	1.25	1.25	1.250	6.00	1.56	1.50	—	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
4111694VRS	1.50	1.50	1.500	6.00	1.56	1.50	—	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
left hand												
4111603VRS	1.25	1.25	1.250	6.00	1.19	1.13	—	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
4111664VRS	1.00	1.00	1.000	6.00	1.50	1.50	.25	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
4111684VRS	1.25	1.25	1.250	6.00	1.56	1.50	—	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm



See pages B128–B129 for inserts.



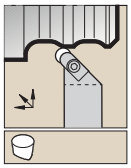
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CRDP

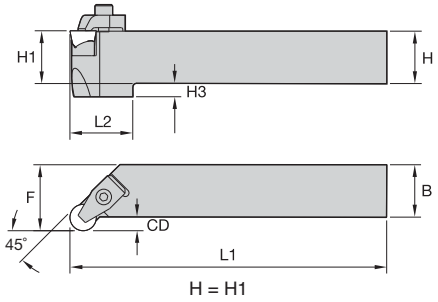




catalog number	H	B	F	L1	CD	H3	gage insert	nest	clamp	clamp screw	hex
CRDPN162DV	1.00	1.00	.496	6.00	.75	—	R..V23	**NST1**	**CM214**	**MS1321**	2.5 mm
CRDPN163DV	1.00	1.00	.496	6.00	1.13	—	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRDPN203DV	1.25	1.25	.621	6.00	1.13	—	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRDPN164DV	1.00	1.00	.496	6.00	1.50	.25	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRDPN204DV	1.25	1.25	.621	6.00	1.50	—	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRDPN205DV	1.25	1.25	.621	6.00	1.50	.25	R..V565	**NST4**	**CM217**	**MS1294**	6 mm
CRDPN206DV	1.25	1.25	.621	6.00	1.50	.25	R..V665	**NST5**	**CM217**	**MS1294**	6 mm
CRDPN246DV	1.50	1.50	.746	6.00	1.50	—	R..V665	**NST5**	**CM217**	**MS1294**	6 mm
CRDPN248DV	1.50	1.50	.746	6.00	1.75	.25	R..V88	**NST6**	**CM218**	**MS1242**	8 mm



See pages B128–B129 for inserts.

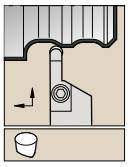


CRGP

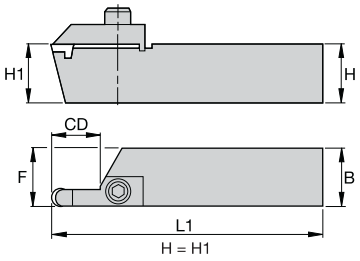




catalog number	H	B	F	L1	CD	H3	gage insert	nest	clamp	clamp screw	hex
right hand											
CRGPR162DV	1.00	1.00	1.250	6.00	.25	–	R..V23	**NST1**	**CM214**	**MS1321**	2.5 mm
CRGPR163DV	1.00	1.00	1.250	6.00	.25	–	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPR164DV	1.00	1.00	1.250	6.00	.25	.25	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPR203DV	1.25	1.25	1.500	6.00	.25	–	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPR204DV	1.25	1.25	1.500	6.00	.25	–	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPR205DV	1.25	1.25	1.500	6.00	.25	.25	R..V565	**NST4**	**CM217**	**MS1294**	6 mm
CRGPR206DV	1.25	1.25	1.500	6.00	.25	.25	R..V665	**NST5**	**CM217**	**MS1294**	6 mm
CRGPR246DV	1.50	1.50	1.750	6.00	.25	–	R..V665	**NST5**	**CM217**	**MS1294**	6 mm
left hand											
CRGPL162DV	1.00	1.00	1.250	6.00	.25	–	R..V23	**NST1**	**CM214**	**MS1321**	2.5 mm
CRGPL163DV	1.00	1.00	1.250	6.00	.25	–	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPL164DV	1.00	1.00	1.250	6.00	.25	.25	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPL203DV	1.25	1.25	1.500	6.00	.25	–	R..V35	**NST2**	**CM219**	**CS412**	3.5 mm
CRGPL204DV	1.25	1.25	1.500	6.00	.25	–	R..V45	**NST3**	**CM216**	**CS412**	3.5 mm
CRGPL205DV	1.25	1.25	1.500	6.00	.25	.25	R..V565	**NST4**	**CM217**	**MS1294**	6 mm
CRGPL206DV	1.25	1.25	1.500	6.00	.25	.25	R..V665	**NST5**	**CM217**	**MS1294**	6 mm
CRGPL246DV	1.50	1.50	1.750	6.00	.25	–	R..V665	**NST5**	**CM217**	**MS1294**	6 mm



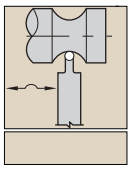
See pages B128–B129 for inserts.

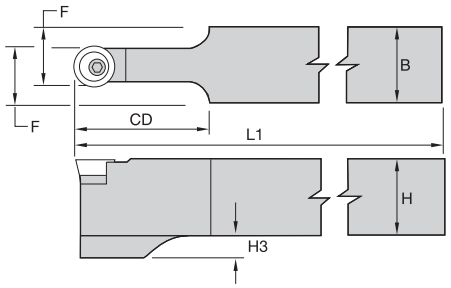


VRAO




catalog number	H	B	F	L1	CD	gage insert	clamp	clamp screw	hex
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





Bevel Lock

catalog number	H	B	F	L1	CD	H3	gage insert	shim	lock pin	hex
PROON164D	1.00	1.00	.750	6.00	1.86	—	RC..43	**SMRN42B**	**BP46**	3/32
PROON204D	1.25	1.25	.875	6.00	1.88	—	RC..43	**SMRN42B**	**BP46**	3/32
PROON244D	1.50	1.50	1.000	6.00	1.88	—	RC..43	**SMRN42B**	**BP46**	3/32
PROON206D	1.25	1.25	1.000	6.00	2.36	—	RC..64	**SMRN63B**	**BP68**	1/8
PROON246	1.50	1.50	1.125	8.00	2.37	—	RC..64	**SMRN63B**	**BP68**	1/8
PROON208D	1.25	1.25	1.125	6.00	2.32	.25	RC..86	**SMRN84B**	**BP812**	9/64
PROON248	1.50	1.50	1.250	8.00	2.37	—	RC..86	**SMRN84B**	**BP812**	9/64
PROON328	2.00	2.00	1.500	18.00	4.50	—	RC..86	**SMRN84B**	**BP812**	9/64
PROON3210	2.00	2.00	1.625	18.00	4.50	—	RC..106	**SMRN104B**	**BP812**	9/64

NOTE: These toolholders accept RCGH-43 inserts only. RCMH-43 inserts will not fit.



Beyond BLAST™ • The First Through-Insert Coolant Delivery System from Kennametal

That's **Beyond BLAST.**™

That's **Different Thinking.**

We didn't just improve metalcutting technology. We reinvented it.

Introducing Beyond BLAST, a revolutionary insert platform that delivers many of the benefits of high-pressure systems at conventional coolant pressures. Advanced coolant-application technology makes cutting more efficient and effective — while extending tool life. This tool is specifically designed for titanium and other high-temp alloys.

Higher Productivity, Extended Tool Life

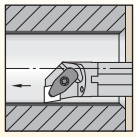
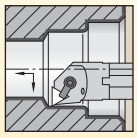
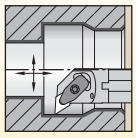
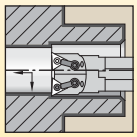
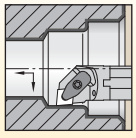
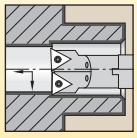
- Increased tool life up to 300%, depending on the insert geometry and cutting conditions.
- Significant productivity and tool life increase in titanium machining.
- Higher metal removal rates and reduced cycle time.
- Chipbreaker design in combination with PCT provides excellent chip control and workpiece finish.

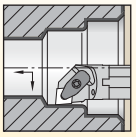
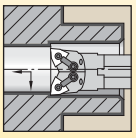
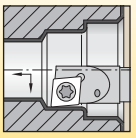
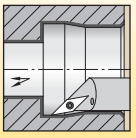
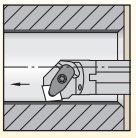
Versatility

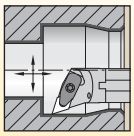
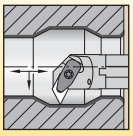
- Ideal for applications where productivity or tool life is limited due to excess heat generated.
- Offered as a standard item with engineered solution capabilities.
- Provides increased performance with high-pressure or low-pressure coolant delivery systems.

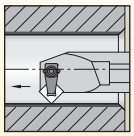
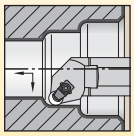


beyond™ BLAST™

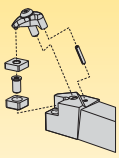
tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
0° Lead Angle						
	C 80°	Kenloc™	●			C80
		Screw-On	●		●	C94–C97
		Kenclamp	●			C76
	T 60°	Kenloc	●			C84
		Kenclamp	●			C79
		Kendex™	●		●	C91–C93
		Screw-On	●		●	C108–C111
-3° Lead Angle						
	D 55°	Kenloc	●		●	C83
		Kenclamp	●		●	C78
		Screw-On	●		●	C105–C106
		TNT	●		●	–
	V 35°	Kenloc	●		●	C85
		Screw-On	●		●	C114
	T 60°	Kenloc	●			C84
		Screw-On	●			–
	W 80°	Screw-On	●		●	C118
-5° Lead Angle						
	C 80°	Kenloc	●		●	C81
		Kenclamp	●		●	C77
		Kendex	●		●	C87, C90
		Screw-On	●		●	C97–C98 C100–C104
		TNT	●		●	–

tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
-5° Lead Angle						
	T 60°	Kendex	●		●	C89
		Screw-On	● ●		● ●	C111–C113
	D 55°	Screw-On		●		C107
	V 35°	Screw-On	●		●	C114
	W 80°	Kenloc	●			C85
		Screw-On	●		●	C115–C117
		TNT	●		●	C87
7° Lead Angle						
	C 80°	Screw-On	●		●	C99
-10° Lead Angle						
	V 35°	Screw-On	●		●	C114
15 and -15° Lead Angle						
	C 80°	Kenloc	●			C80
		Kenclamp	●			C76
	S 90°	Kenloc	●			C83
		Kenclamp	●			C79
		Kendex	●			C90
		TNT	●			–
	F 50° -15° lead angle	Screw-On	●		●	–

tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
-17.5° Lead Angle						
	 D 55°	Kenloc™	●		●	C82
		Kenclamp™	●		●	C78
	 V 35°	Screw-On	●		●	C114
27.5° Lead Angle						
	 D 55°	Kenloc	●		●	C82
		Kenclamp	●		●	C77

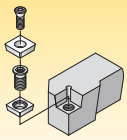
tool path	insert shape	clamping style	boring	back boring	profiling	page(s)
45° Lead Angle						
	 S 90°	Kenloc	●			–
	 R	Kendex™	●		●	C88
		TNT	●		●	C87

Clamping Styles



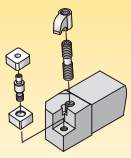
Kenclamp Style

- Suitable for Kenloc inserts.
- Unique clamp design provides rigid clamping.
- Ensures insert repeatability and seating.
- Reduced chatter and improved tool life.



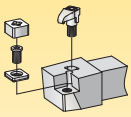
Screw-On Style

- Top clamping by screw for Screw-On inserts.



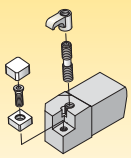
Kenloc Style

- Suitable for Kenloc inserts.
- Lock pin and top clamp provide rigid clamping.
- Wide variety of insert styles may be used.
- Tools may 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°, 75°, 55°, square, and trigon.
- This system offers the added versatility of using optional hardware to hold standard Kendex and Kenloc inserts.

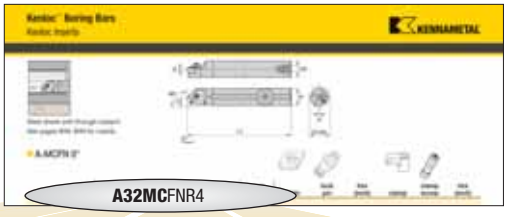


Kendex Style

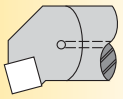
- Suitable for Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.

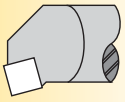
How Do Catalog Numbers Work?

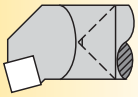
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

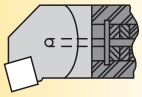


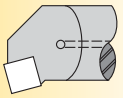
A — Bar Type

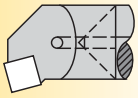
A 
Steel bar with coolant

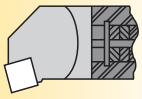
S 
Steel bar without coolant

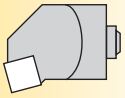
C 
Carbide bar

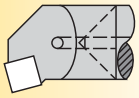
D 
DeVibrator bar with coolant

D 
Tuneable bar with coolant

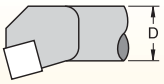
E 
Carbide bar with coolant

B 
DeVibrator

H 
Interchangeable head

L 
Heavy metal bar with coolant

32 — Bar Diameter



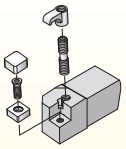
Inch:
A two-digit number indicates the bar diameter in 1/16" increments

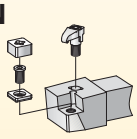
Bar Length**

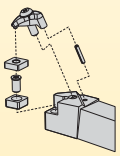
3	=	F
3.5	=	G
4	=	H
4.5	=	J
5	=	K
5.5	=	L
6	=	M
6.5	=	N
7	=	Q
8	=	R
10	=	S
12	=	T
14	=	U
16	=	V
18	=	W
20	=	Y

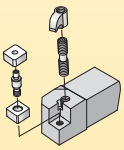
** Used only when more than one length is available or a special length is required.

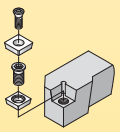
M — Insert Holding Method

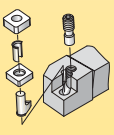
C 
Kendex™

N 
Top Notch™ Profiling

D 
Kenclamp™

M 
Kenloc™

S 
Screw-On

P 
Kenlever™

C — Insert Shape

A 

B 

C 

D 

E 

H 

K 

L 

M 

O 

P 

R 

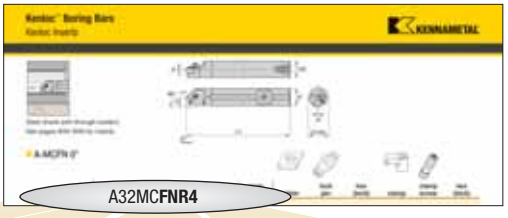
S 

T 

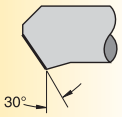
V 

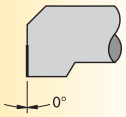
W 

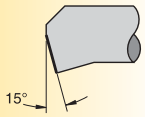
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

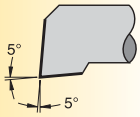


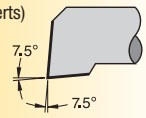
F
Bar Style or Lead Angle

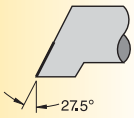
E


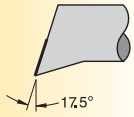
F


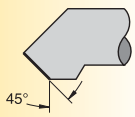
K


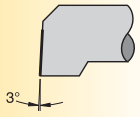
L


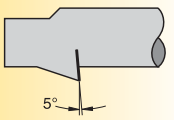
(E-style inserts)
L


P


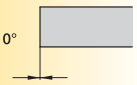
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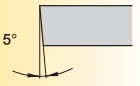
S


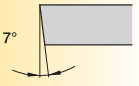
U


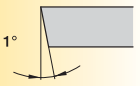
X


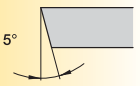
N
Insert Clearance Angle

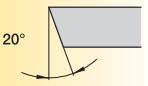
N 0°


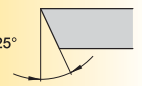
B 5°


C 7°


P 11°


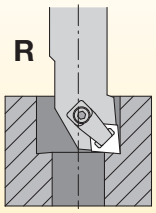
D 15°


E 20°


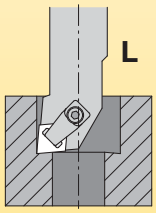
F 25°


R
Hand of Tool

R = Right-hand boring bar



L = Left-hand boring bar



4
Insert Size

Inserts IC
Number of 1/8ths of "D"

Additional Information

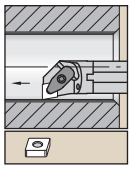
M.. = TNT/MTS clamping systems for ceramic and PCBN inserts

D = Dual pocket

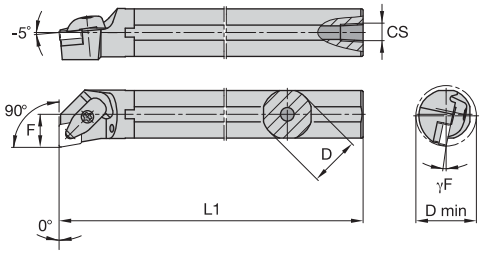
AP5 = Axil positive

KC = Kenclamp

+ = Insert thickness



Steel shank with through coolant.
See pages B40–B49 for inserts.

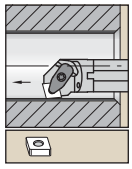


A-DCFN-KC 0°

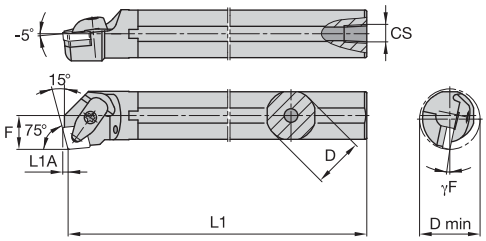





catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand													
A16TDCFNR4KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	—	—	—	**CM234RLP ASSY**	**SSP025016M**	15 IP
A20UDCFNR4KC3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCFNR4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand													
A16TDCFNL4KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	—	—	—	**CM234RLP ASSY**	**SSP025016M**	15 IP
A20UDCFNL4KC3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCFNL4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



Steel shank with through coolant.
See pages B40–B49 for inserts.

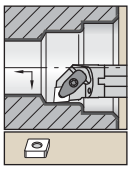


A-DCKN-KC 15°

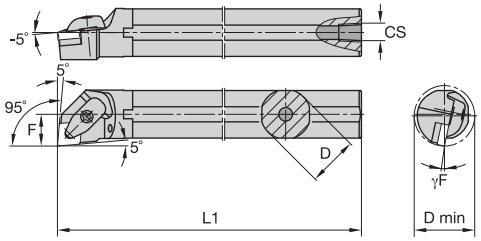





catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand														
A20UDCKNR4KC3	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCKNR4KC3	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCKNR4KC3	2.000	2.400	1.281	16.00	.12	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCKNR5KC4	2.000	2.400	1.281	16.00	.15	1/4-18 NPT	-10.0	CN..543	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
left hand														
A20UDCKNL4KC3	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCKNL4KC3	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCKNL4KC3	2.000	2.400	1.281	16.00	—	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCKNL5KC4	2.000	2.400	1.281	16.00	—	1/4-18 NPT	-10.0	CN..543	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP



Steel shank with through coolant.
See pages B40–B49 for inserts.

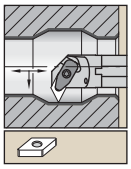


A-DCLN-KC -5°

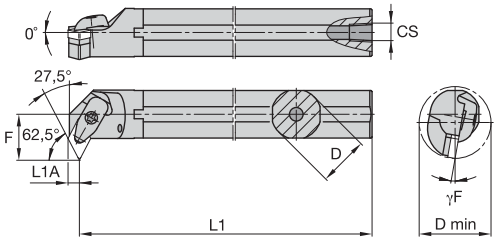





catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand													
A16TDCLNR3KC2	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	CN..322	—	—	—	**CM234RLP ASSY**	**SSP025016M**	9 IP
A16TDCLNR4KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	—	—	—	**CM234RLP ASSY**	**SSP025016M**	15 IP
A20UDCLNR4KC3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCLNR4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDCLNR4KC3	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCLNR4KC3	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40VDCLNR4KC3	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCLNR5KC4	1.500	1.760	.890	14.00	1/4-18 NPT	-14.0	CN..543	**ICSN533**	**KMSP5S15IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
A32VDCLNR5KC4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
A32VDCLNR6KC4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP
A40VDCLNR6KC4	2.500	3.030	1.531	16.00	1/4-18 NPT	-10.0	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP
left hand													
A16TDCLNL3KC2	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	CN..322	—	—	—	**CM234RLP ASSY**	**SSP025016M**	9 IP
A16TDCLNL4KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	CN..432	—	—	—	**CM234RLP ASSY**	**SSP025016M**	15 IP
A20UDCLNL4KC3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP4S15IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCLNL4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDCLNL4KC3	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDCLNL4KC3	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40VDCLNL4KC3	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDCLNL5KC4	1.500	1.760	.890	14.00	1/4-18 NPT	-14.0	CN..543	**ICSN533**	**KMSP5S15IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
A32VDCLNL5KC4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	**ICSN533**	**KMSP515IP**	15 IP	**CM209R ASSY**	**SSP025018M**	15 IP
A32VDCLNL6KC4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP
A40VDCLNL6KC4	2.500	3.030	1.531	16.00	1/4-18 NPT	-10.0	CN..643	**ICSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP



Steel shank with through coolant.
See pages B50–B57 for inserts.

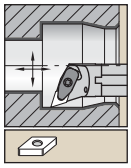


A-DDPN-KC 27.5°

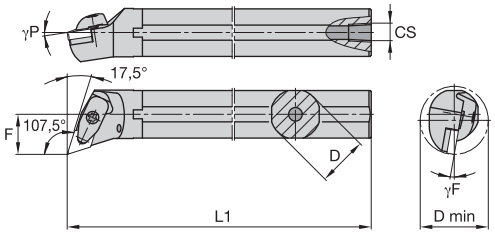





catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand														
A20UDDPNR4KC3	1.250	1.705	1.000	14.00	.26	1/4-18 NPT	-13.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDPNR4KC3	1.500	2.000	1.125	14.00	.26	1/4-18 NPT	-10.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
A20UDDPNL4KC3	1.250	1.705	1.000	14.00	.26	1/4-18 NPT	-13.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDPNL4KC3	1.500	2.000	1.125	14.00	.26	1/4-18 NPT	-10.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP

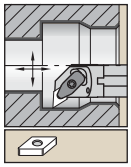


Steel shank with through coolant.
See pages B50–B57 for inserts.

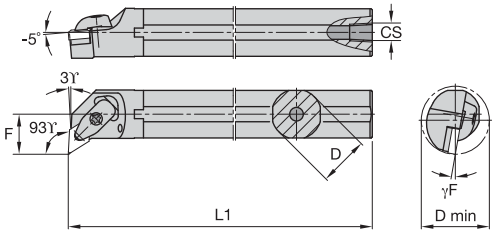


A-DDQN-KC -17.5°

catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand														
A20UDDQNR4KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	-12.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDQNR4KC3	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.5	-8.5	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand														
A20UDDQNL4KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	-12.0	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDQNL4KC3	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.5	-8.5	DN.432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



Steel shank with through coolant.
See pages B50–B57 for inserts.

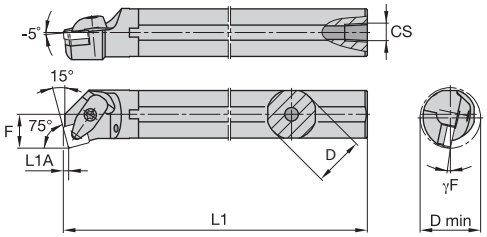


A-DDUN-KC -3°

catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand													
A16TDDUNR3KC3	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	—	—	—	**CM234RLP ASSY**	**SSP025016M**	9 IP
A20UDDUNR3KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	DN..332	**IDSN322**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	9 IP
A20UDDUNR4KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDUNR4KC3	1.500	2.000	1.125	14.00	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDDUNR4KC3	1.750	2.250	1.250	14.00	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDDUNR4KC3	2.000	2.500	1.375	16.00	1/4-18 NPT	-8.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand													
A16TDDUNL3KC3	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	—	—	—	**CM234RLP ASSY**	**SSP025016M**	9 IP
A20UDDUNL3KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-10.0	DN..332	**IDSN322**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	9 IP
A20UDDUNL4KC3	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDDUNL4KC3	1.500	2.000	1.125	14.00	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDDUNL4KC3	1.750	2.250	1.250	14.00	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDDUNL4KC3	2.000	2.500	1.375	16.00	1/4-18 NPT	-8.0	DN..432	**IDSN443**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



Steel shank with through coolant.
See pages B59–B65 for inserts.



A-DSKN-KC 15°

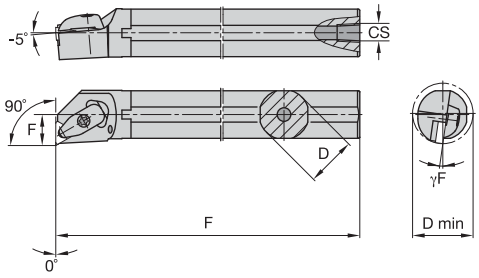





catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	pin	wrench size clamp screw
right hand														
A20UDSKNR4KC3	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDSKNR4KC3	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-10.0	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDSKNR6KC4	2.000	2.400	1.281	16.00	.18	1/4-18 NPT	-12.0	SN..643	**ISSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP
left hand														
A16TDSKNL3KC2	1.000	1.200	.640	12.00	.09	1/4-18 NPT	-10.0	SN..322	–	–	–	**CM234RLP ASSY**	**SSP025016M**	9 IP
A20UDSKNL3KC2	1.250	1.470	.765	14.00	.09	1/4-18 NPT	-10.0	SN..322	**ISSN332**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	9 IP
A20UDSKNL4KC3	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A24UDSKNL4KC3	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-10.0	SN..432	**ISSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDSKNL6KC4	2.000	2.400	1.281	16.00	.18	1/4-18 NPT	-12.0	SN..643	**ISSN633**	**KMSP625IP**	25 IP	**CM210R ASSY**	**SSP025018M**	25 IP



Steel shank with through coolant.
See pages B66–B74 for inserts.



A-DTFN-KC 0°

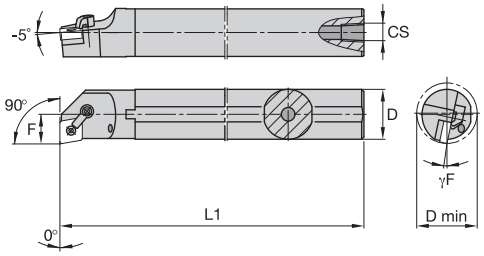





catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	wrench size shim screw	clamp assembly	slotted pin	wrench size clamp screw
right hand													
A16TDTFNR3KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	TN..332	–	–	–	**CM234RLP ASSY**	**SSP025016M**	9 IP
A24UDTFNR4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDTFNR3KC3	1.750	2.010	1.015	14.00	1/4-18 NPT	-10.0	TN..332	**ITSN323**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	9 IP
A32VDTFNR4KC3	2.000	2.400	1.281	16.00	1/4-18 NPT	-8.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
left hand													
A16TDTFNL3KC3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	TN..332	–	–	–	**CM234RLP ASSY**	**SSP025016M**	9 IP
A20UDTFNL3KC3	1.250	1.470	1.000	14.00	1/4-18 NPT	-12.0	TN..332	–	–	–	**CM234R ASSY**	**SSP025016M**	9 IP
A24UDTFNL3KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..332	**ITSN323**	**KMSP315IP**	9 IP	**CM234R ASSY**	**SSP025016M**	9 IP
A24UDTFNL4KC3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A28UDTFNL4KC3	1.750	2.010	1.015	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A32VDTFNL4KC3	2.000	2.400	1.281	16.00	1/4-18 NPT	-8.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP
A40VDTFNL4KC3	2.500	3.030	1.531	16.00	1/4-18 NPT	-6.0	TN..432	**ITSN433**	**KMSP415IP**	15 IP	**CM234R ASSY**	**SSP025016M**	15 IP



Steel shank with through coolant.
See pages B40–B49 for inserts.



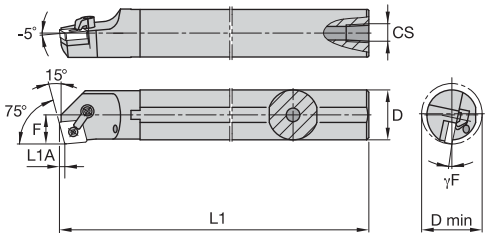
A-MCFN 0°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16MCFNR4	1.000	1.200	.640	12.00	1/4-18 NPT	-14.0	CN..432	—	**KL44**	—	**CK7**	**STC9**	3/32
A20MCFNR4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A24MCFNR4	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	CN..432	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A32MCFNR5	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
left hand													
A16MCFNL4	1.000	1.200	.640	12.00	1/4-18 NPT	-14.0	CN..432	—	**KL44**	—	**CK7**	**STC9**	3/32
A20MCFNL4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A24MCFNL4	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	CN..432	**ICSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
A32MCFNL5	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8



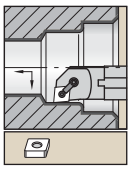
Steel shank with through coolant.
See pages B40–B49 for inserts.



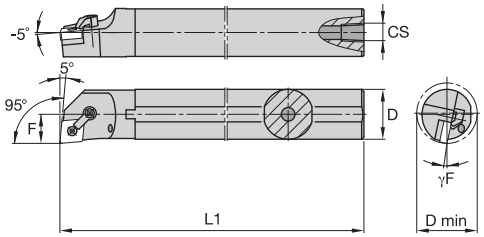
A-MCKN 15°



catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20MCKNR4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A24MCKNR4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A32MCKNR4	2.000	2.400	1.281	16.00	.12	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A32MCKNR5	2.000	2.400	1.281	16.00	.15	1/4-18 NPT	-10.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	STC4	5/32
left hand														
A20MCKNL4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A24MCKNL4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A32MCKNL4	2.000	2.400	1.281	16.00	.12	1/4-18 NPT	-8.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	STC20	1/8
A32MCKNL5	2.000	2.400	1.281	16.00	.15	1/4-18 NPT	-10.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	STC4	5/32



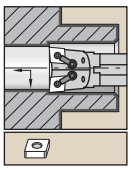
Steel shank with through coolant.
See pages B40–B49 for inserts.



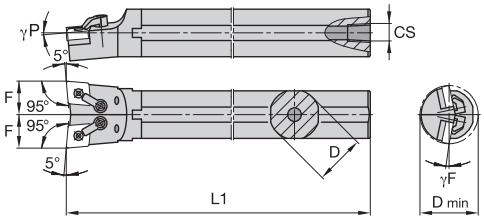
A-MCLN -5°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16MCLNR3	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	CN..322	—	KL33	5/64	CK6	STC5	3/32
A16TMCLNR4	1.000	1.200	.640	12.00	1/4-18 NPT	-14.0	CN..432	—	KL44	3/32	CK20	STC11	1/8
A20UMCLNR4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A24UMCLNR4	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A28UMCLNR4	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A32VMCLNR4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A40VMCLNR4	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A24MCLNR5	1.500	2.000	.890	14.00	1/4-18 NPT	-12.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A32MCLNR5	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A40MCLNR5	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A32VMCLNR6	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..643	ICSN633	KL68	9/64	CK12	STC4	5/32
A40VMCLNR6	2.500	3.030	1.531	16.00	1/4-18 NPT	-10.0	CN..643	ICSN633	KL68	9/64	CK12	STC4	5/32
left hand													
A16MCLNL3	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	CN..322	—	KL33	5/64	CK6	STC5	3/32
A16TMCLNL4	1.000	1.200	.640	12.00	1/4-18 NPT	-14.0	CN..432	—	KL44	3/32	CK20	STC11	1/8
A20UMCLNL4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A24UMCLNL4	1.500	1.760	.890	14.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A28UMCLNL4	1.750	2.010	1.015	14.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A32MCLNL4	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A40MCLNL4	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A24MCLNL5	1.500	2.000	.890	14.00	1/4-18 NPT	-12.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A32MCLNL5	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A40MCLNL5	2.500	3.030	1.531	16.00	1/4-18 NPT	-8.0	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32
A32VMCLNL6	2.000	2.400	1.281	16.00	1/4-18 NPT	-12.0	CN..643	ICSN633	KL68	9/64	CK12	STC4	5/32
A40VMCLNL6	2.500	3.030	1.531	16.00	1/4-18 NPT	-10.0	CN..643	ICSN633	KL68	9/64	CK12	STC4	5/32



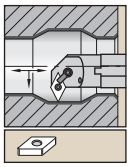
Steel shank with through coolant.
See pages B40–B49 for inserts.



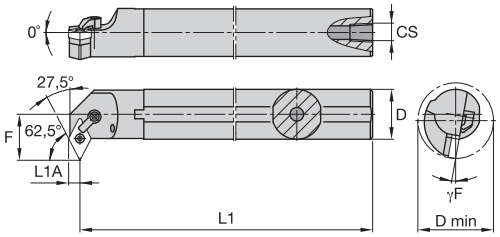
A-MCLN-D -5°



catalog number	D	D min	F	L1	CS	γF°	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	CN..432	—	KL44	—	CK7	STC9	3/32
A20MCLNR4D	1.250	1.875	.765	14.00	1/4-18 NPT	-10.0	CN..432	ICSN433	KL46	3/32	CK20	STC20	1/8
A24MCLNR4D	1.500	2.125	.890	14.00	1/4-18 NPT	-10.0	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	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	CN..543	ICSN533	KL58	1/8	CK12	STC4	5/32



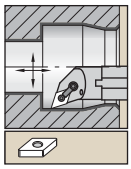
Steel shank with through coolant.
See pages B50–B57 for inserts.



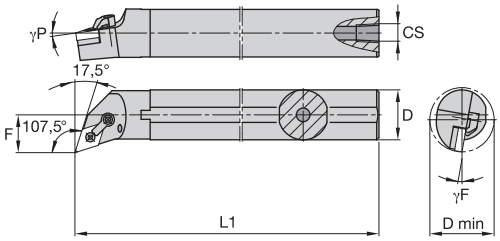
A-MDPN 27.5°



catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20MDPNR4	1.250	1.705	1.000	14.00	.26	1/4-18 NPT	-13.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
A24MDPNR4	1.500	2.000	1.125	14.00	.26	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
left hand														
A20MDPNL4	1.250	1.705	1.000	14.00	.26	1/4-18 NPT	-13.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
A24MDPNL4	1.500	2.000	1.125	14.00	.26	1/4-18 NPT	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8



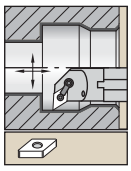
Steel shank with through coolant.
See pages B50–B57 for inserts.



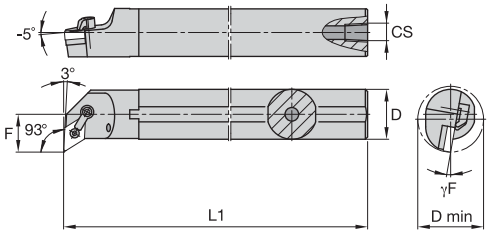
A-MDQN -17.5°



catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20MDQNR4	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A24MDQNR4	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.500	-8.5	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
left hand														
A20MDQNL4	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
A24MDQNL4	1.500	2.000	1.125	14.00	1/4-18 NPT	-8.500	-8.5	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32



Steel shank with through coolant.
See pages B50–B57 for inserts.



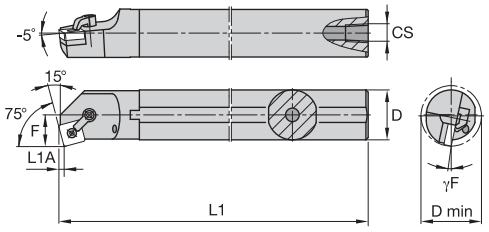
A-MDUN -3°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16MDUNR3	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	—	KL33L	5/64	CK7	STC5	3/32
A20UMDUNR4	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A24UMDUNR4	1.500	2.000	1.125	14.00	1/4-18 NPT	-10.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A28MDUNR4	1.750	2.250	1.250	14.00	1/4-18 NPT	-10.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A32VMDUNR4	2.000	2.500	1.375	16.00	1/4-18 NPT	-8.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
left hand													
A16MDUNL3	1.000	1.300	.750	12.00	1/4-18 NPT	-12.0	DN..332	—	KL33L	5/64	CK7	STC5	3/32
A20UMDUNL4	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A24UMDUNL4	1.500	2.000	1.125	14.00	1/4-18 NPT	-10.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A28MDUNL4	1.750	2.250	1.250	14.00	1/4-18 NPT	-10.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32
A32VMDUNL4	2.000	2.500	1.375	16.00	1/4-18 NPT	-8.0	DN..432	IDSN443	KL46L	3/32	CK12	STC4	5/32



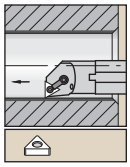
Steel shank with through coolant.
See pages B59–B65 for inserts.



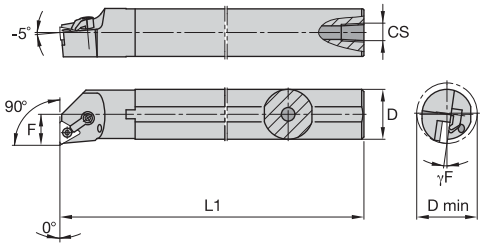
A-MSKN 15°



catalog number	D	D min	F	L1	L1A	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20MSKNR4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	SN..432	—	KL44	3/32	CK9	STC4	5/32
A24UMSKNR4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-10.0	SN..432	ISSN432	KL46	3/32	CK9	STC4	5/32
A28MSKNR4	1.750	2.010	1.015	14.00	.12	1/4-18 NPT	-10.0	SN..432	ISSN432	KL46	3/32	CK9	STC4	5/32
A32MSKNR6	2.000	2.400	1.281	16.00	.18	1/4-18 NPT	-12.0	SN..643	ISSN633	KL68	9/64	CK12	STC4	5/32
A40MSKNR6	2.500	3.030	1.531	16.00	.18	1/4-18 NPT	-10.0	SN..643	ISSN633	KL68	9/64	CK12	STC4	5/32
left hand														
A20MSKNL4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	-14.0	SN..432	—	KL44	3/32	CK9	STC4	5/32
A24UMSKNL4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	-10.0	SN..432	ISSN443	KL46	3/32	CK9	STC4	5/32
A32MSKNL6	2.000	2.400	1.281	16.00	.18	1/4-18 NPT	-12.0	SN..643	ISSN633	KL68	9/64	CK12	STC4	5/32
A40MSKNL6	2.500	3.030	1.531	16.00	.18	1/4-18 NPT	-10.0	SN..643	ISSN633	KL68	9/64	CK12	STC4	5/32



Steel shank with through coolant.
See pages B66–B74 for inserts.

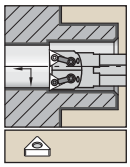


A-MTFN 0°

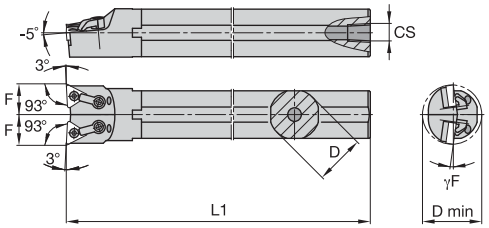





catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16MTFNR3	1.000	1.220	.640	12.00	1/4-18 NPT	-12.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A20UMTFNR3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A24UMTFNR3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..332	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A28MTFNR3	1.750	2.010	1.015	14.00	1/4-18 NPT	-10.0	TN..332	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A24UMTFNR4	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A28MTFNR4	1.750	2.010	1.015	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A32MTFNR4	2.000	2.400	1.281	16.00	1/4-18 NPT	-8.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A40MTFNR4	2.500	3.030	1.531	16.00	1/4-18 NPT	-6.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
left hand													
A16MTFNL3	1.000	1.220	.640	12.00	1/4-18 NPT	-12.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A20UMTFNL3	1.250	1.470	.765	14.00	1/4-18 NPT	-12.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A24UMTFNL3	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..332	**ITSN323**	**KL34L**	5/64	**CK7**	**STC9**	3/32
A24UMTFNL4	1.500	1.760	.890	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A28MTFNL4	1.750	2.010	1.015	14.00	1/4-18 NPT	-10.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32
A40MTFNL4	2.500	3.030	1.531	16.00	1/4-18 NPT	-6.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



Steel shank with through coolant.
See pages B66–B74 for inserts.

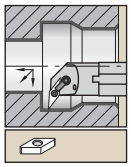


A-MTUN-D -3°

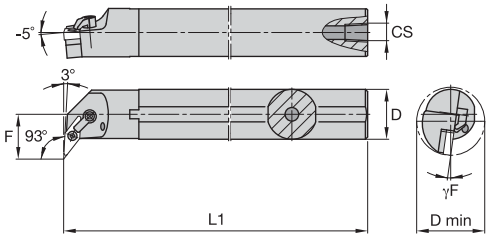





catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
A16MTUNR3D	1.000	1.312	.640	12.00	1/4-18 NPT	-10.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A20MTUNR3D	1.250	1.550	.765	14.00	1/4-18 NPT	-10.0	TN..332	—	**KL33L**	5/64	**CK7**	**STC9**	3/32
A32MTUNR4D	2.000	2.592	1.281	16.00	1/4-18 NPT	-8.0	TN..432	**ITSN433**	**KL46**	3/32	**CK9**	**STC4**	5/32



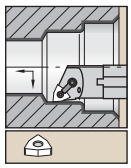
Steel shank with through coolant.
See pages B74–B78 for inserts.



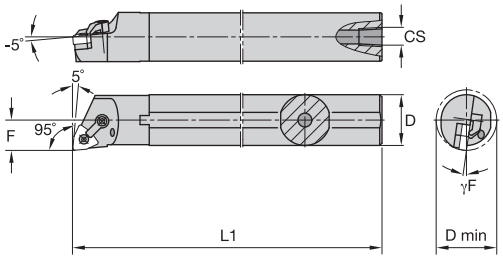
A-MVUN -3°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A20MVUNR3	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A24UMVUNR3	1.500	2.000	1.125	14.00	1/4-18 NPT	-12.0	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A32MVUNR4	2.000	2.500	1.325	16.00	1/4-18 NPT	-10.0	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
A40MVUNR4	2.500	3.250	1.750	16.00	1/4-18 NPT	-10.0	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
left hand													
A20UMVUNL3	1.250	1.705	1.000	14.00	1/4-18 NPT	-12.0	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A24MVUNL3	1.500	2.000	1.125	14.00	1/4-18 NPT	-12.0	VN..332	**IVSN322**	**KL34L**	5/64	**CK43**	**STC4**	5/32
A32MVUNL4	2.000	2.500	1.325	16.00	1/4-18 NPT	-10.0	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32
A40MVUNL4	2.500	3.250	1.750	16.00	1/4-18 NPT	-10.0	VN..432	**IVSN433**	**KL46**	3/32	**CK43**	**STC4**	5/32



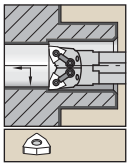
Steel shank with through coolant.
See pages B79–B83 for inserts.



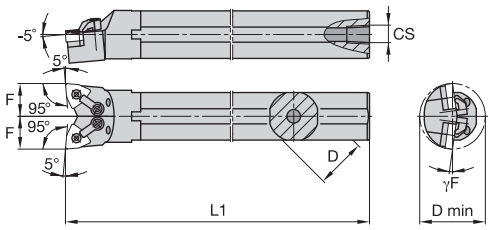
A-MWLN 5°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16MWLNR3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	WN..332	**–**	**KL33L**	5/64	**CK6**	**STC5**	3/32
A24MWLNR3	1.500	1.760	.890	14.00	1/4-18 NPT	-8.0	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
A16TMWLNR4	1.000	1.220	.640	12.00	1/4-18 NPT	-12.0	WN..432	**–**	**KL44**	3/32	**CK20**	**STC11**	1/8
A20UMWLNR4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24UMWLNR4	1.500	1.760	.890	14.00	1/4-18 NPT	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
left hand													
A16MWLNL3	1.000	1.200	.640	12.00	1/4-18 NPT	-12.0	WN..332	**–**	**KL33L**	5/64	**CK6**	**STC5**	3/32
A24MWLNL3	1.500	1.760	.890	14.00	1/4-18 NPT	-8.0	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
A16MWLNL4	1.000	1.220	.640	12.00	1/4-18 NPT	-12.0	WN..432	**–**	**KL44**	3/32	**CK20**	**STC11**	1/8
A20UMWLNL4	1.250	1.470	.765	14.00	1/4-18 NPT	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
A24UMWLNL4	1.500	1.760	.890	14.00	1/4-18 NPT	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8



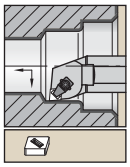
Steel shank with through coolant.
See pages B79–B83 for inserts.



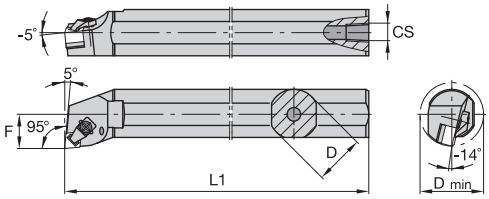
A-MWLN-D 5°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
A16MWLNR3D	1.000	1.310	.640	12.00	1/4-18 NPT	-11.0	WN..332	**—**	**KL33L**	5/64	**CK6**	**STC5**	3/32
A16MWLNR4D	1.000	1.420	.700	12.00	1/4-18 NPT	-12.0	WN..432	**—**	**KL44**	3/32	**CK6**	**STC5**	3/32
A20MWLNR3D	1.250	1.560	.765	14.00	1/4-18 NPT	-10.0	WN..332	**IWSN322**	**KL34L**	5/64	**CK6**	**STC5**	3/32
A20MWLNR4D	1.250	1.550	.765	14.00	1/4-18 NPT	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK6**	**STC5**	3/32
A24MWLNR4D	1.500	1.810	.890	14.00	1/4-18 NPT	-14.0	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	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8



Steel shank with through coolant.
See page B122 for inserts.

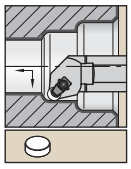


A-CCLN-MX -5°

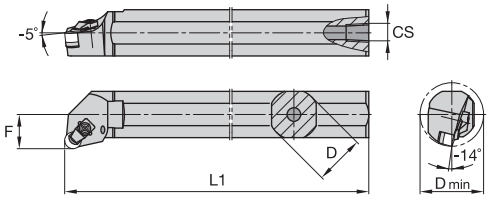




catalog number	D	D min	F	L1	CS	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand											
A24CCLNR4MX5	1.500	2.165	.890	14.00	1/4-18 NPT	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
A32CCLNR4MX5	2.000	2.323	1.281	16.00	1/4-18 NPT	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
left hand											
A24CCLNL4MX5	1.500	2.165	.890	14.00	1/4-18 NPT	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25
A32CCLNL4MX5	2.000	2.323	1.281	16.00	1/4-18 NPT	CN.X452	**552.221**	**554.260**	T20	**551.326**	T25



Steel shank with through coolant.
See page B124 for inserts.



A-CRGN-MN

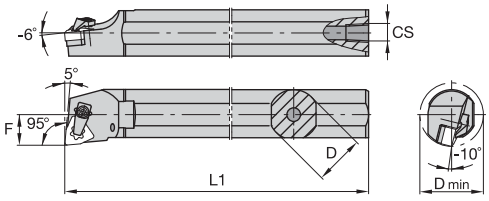




catalog number	D	D min	F	L1	CS	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand											
A32CRGNR4MN5	2.000	2.559	1.281	16.00	1/4-18 NPT	RN.45	**552.230**	**554.260**	T20	**551.343**	T25
left hand											
A32CRGNL4MN5	2.000	2.559	1.281	16.00	1/4-18 NPT	RN.45	**552.230**	**554.260**	T20	**551.343**	T25



Steel shank with through coolant.
See page B127 for inserts.

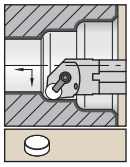


A-CWLN-MX -5°

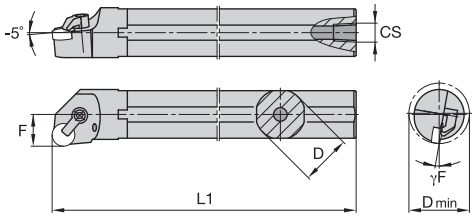




catalog number	D	D min	F	L1	CS	gage insert	shim	shim screw	Torx	clamp assembly	Torx
right hand											
A24CWLNR4MX5	1.500	3.150	.890	14.00	1/4-18 NPT	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25
left hand											
A24CWLNL4MX5	1.500	3.150	.890	14.00	1/4-18 NPT	WN.X452	**552.210**	**554.260**	T20	**551.326**	T25



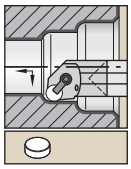
Steel shank with through coolant.
See page B182 for inserts.



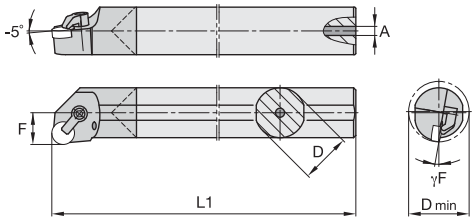
A-CRGN




catalog number	D	D min	F	L1	CS	γF°	gage insert	clamp	clamp screw	hex (inch)
right hand										
A16CRGNR3	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	RN.32	**CK7LP**	**STC9**	3/32
A16CRGNR4	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	RN.42	**CK7LP**	**STC9**	3/32
left hand										
A12CRGNL3	.750	.930	.500	10.00	1/8-27 NPT	-11.0	RN.32	**CK7LP**	**STC9**	3/32
A16CRGNL3	1.000	1.200	.640	12.00	1/4-18 NPT	-10.0	RN.32	**CK7LP**	**STC9**	3/32



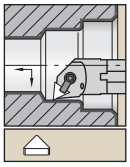
Carbide shank with through coolant.
See page B182 for inserts.



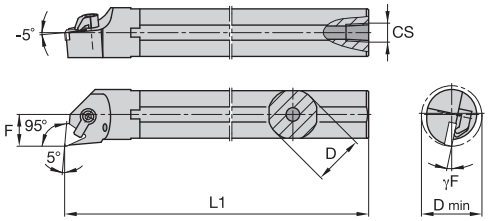
E-CRGN




catalog number	D	D min	F	L1	A	γF°	gage insert	clamp	clamp screw	hex (inch)
right hand										
E16CRGNR3	1.000	1.200	.640	12.00	.3120	-10.0	RN.32	**CK7LP**	**STC9**	3/32
left hand										
E10CRGNL3	.625	.770	.406	10.00	.2180	-12.0	RN.32	**CK7LP**	**STC9**	3/32



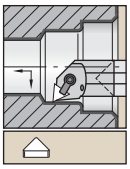
Steel shank with through coolant.
See page B184 for inserts.



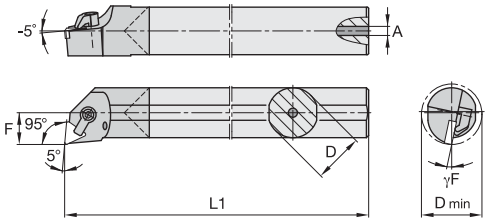
A-CTLN-5°




catalog number	D	D min	F	L1	CS	gage insert	clamp	clamp screw	hex (inch)
right hand									
A08CTLNR2	.500	.600	.312	8.00	1/16-27 NPT	TN.221	**CK27**	**STC27**	5/64
A10CTLNR2	.625	.770	.406	10.00	1/8-27 NPT	TN.221	**CK7LP**	**STC9**	3/32
A16CTLNR2	1.000	1.200	.640	12.00	1/4-18 NPT	TN.221	**CK7LP**	**STC9**	3/32
left hand									
A10CTLNL2	.625	.770	.406	10.00	1/8-27 NPT	TN.221	**CK7LP**	**STC9**	3/32



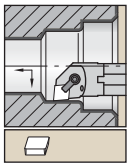
Carbide shank with through coolant.
See page B184 for inserts.



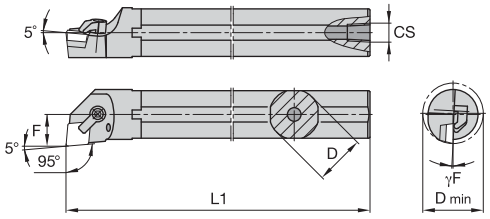
E-CTLN-5°




catalog number	D	D min	F	L1	A	gage insert	clamp	clamp screw	hex (inch)
right hand									
E08CTLNR2	.500	.600	.312	8.00	.19	TN.221	**CK27**	**STC27**	5/64
E12CTLNR2	.750	.930	.500	10.00	.28	TN.221	**CK7LP**	**STC9**	3/32
left hand									
E08CTLNL2	.500	.600	.312	8.00	.19	TN.221	**CK27**	**STC27**	5/64



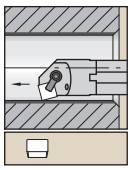
Steel shank with through coolant.
See page B84 for inserts.



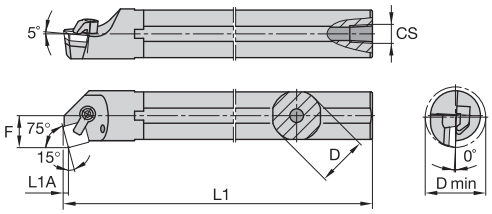
A-CCLP-5°



catalog number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
A16CCLPR4	1.000	1.200	.640	12.00	1/4-18 NPT	-3.0	CP.422	**SM369**	**S19**	1/16	**CK20**	**STC11**	1/8
A24CCLPR4	1.500	1.760	.890	14.00	1/4-18 NPT	0.0	CP.422	**SM369**	**S19**	1/16	**CK22**	**STC26**	1/8



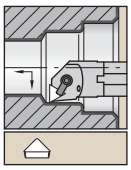
Steel shank with through coolant.
See pages B85–B86 and B129–B130 for inserts.



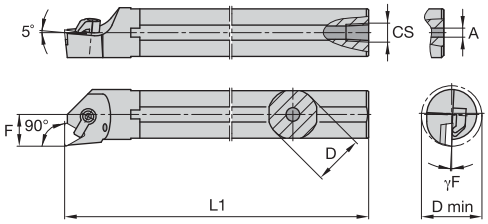
A-CSKP 15°



catalog number	D	D min	F	L1	L1A	CS	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
A16CSKPR4	1.000	1.200	.640	12.00	.12	1/4-18 NPT	SP.422	**—**	**—**	—	**CK20**	**STC11**	1/8
A20CSKPR4	1.250	1.470	.765	14.00	.12	1/4-18 NPT	SP.422	**SM40**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CSKPR4	1.500	1.760	.890	14.00	.12	1/4-18 NPT	SP.422	**SM40**	**S19**	1/16	**CK10**	**STC8**	5/32



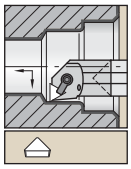
Steel shank with through coolant.
See pages B86–B87 and
B130 for inserts.



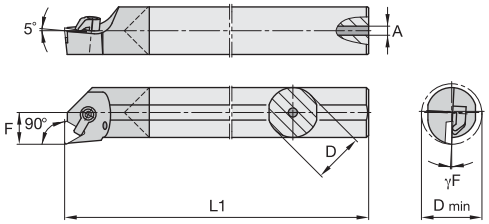
A-CTFP 0°



catalog number	D	D min	F	L1	A	CS	γF°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A06CTFPR2	.375	.480	.250	6.00	.13	—	-3.0	TP..2151	**—**	**—**	—	**CK27**	**STC27**	5/64
A08CTFPR2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	TP.221	**—**	**—**	—	**CK27**	**STC27**	5/64
A10CTFPR2	.625	.770	.406	10.00	—	1/8-27 NPT	-4.0	TP.221	**—**	**—**	—	**CK19**	**STC9**	3/32
A12CTFPR3	.750	.930	.500	10.00	—	1/8-27 NPT	0.0	TP.322	**—**	**—**	—	**CK7**	**STC9**	3/32
A16TCTFPR3	1.000	1.200	.640	12.00	—	1/4-18 NPT	0.0	TP.322	**—**	**—**	—	**CK20**	**STC11**	1/8
A20UCTFPR3	1.250	1.470	.765	14.00	—	1/4-18 NPT	-3.0	TP.322	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CTFPR3	1.500	1.760	.890	14.00	—	1/4-18 NPT	-3.0	TP.322	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CTFPR4	1.500	1.760	.890	14.00	—	1/4-18 NPT	-3.0	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
A32CTFPR4	2.000	2.400	1.281	16.00	—	1/4-18 NPT	-3.0	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
A40CTFPR4	2.500	3.030	1.531	16.00	—	1/4-18 NPT	-3.0	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32
left hand														
A08CTFPL2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	TP.221	**—**	**—**	—	**CK27**	**STC27**	5/64
A10CTFPL2	.625	.770	.406	10.00	—	1/8-27 NPT	-4.0	TP.221	**—**	**—**	—	**CK19**	**STC9**	3/32
A12CTFPL3	.750	.930	.500	10.00	—	1/8-27 NPT	0.0	TP.322	**—**	**—**	—	**CK7**	**STC9**	3/32
A16TCTFPL3	1.000	1.200	.640	12.00	—	1/4-18 NPT	0.0	TP.322	**—**	**—**	—	**CK20**	**STC11**	1/8
A20UCTFPL3	1.250	1.470	.765	14.00	—	1/4-18 NPT	-3.0	TP.322	**SM41**	**S19**	1/16	**CK10**	**STC8**	5/32
A24CTFPL4	1.500	1.760	.890	14.00	—	1/4-18 NPT	-3.0	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
A32CTFPL4	2.000	2.400	1.281	16.00	—	1/4-18 NPT	-3.0	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32



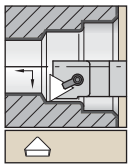
Carbide shank with through coolant.
See pages B86–B87 and
B130 for inserts.



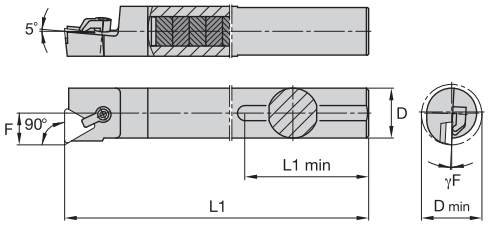
E-CTFP 0°




catalog number	D	D min	F	L1	A	γF°	gage insert	clamp	clamp screw	hex (inch)
right hand										
E08KCTFPR2	.500	.600	.312	5.00	.19	-3.0	TP.221	**CK27**	**STC27**	5/64
E08RCTFPR2	.500	.600	.312	8.00	.19	-3.0	TP.221	**CK27**	**STC27**	5/64
E10MCTFPR2	.625	.770	.406	6.00	.22	0.0	TP.221	**CK19**	**STC9**	3/32
E10SCTFPR2	.625	.770	.406	10.00	.22	0.0	TP.221	**CK19**	**STC9**	3/32
E12QCTFPR3	.750	.930	.500	7.00	.28	0.0	TP.322	**CK7**	**STC9**	3/32
E12SCTFPR3	.750	.930	.500	10.00	.28	0.0	TP.322	**CK7**	**STC9**	3/32
E16TCTFPR3	1.000	1.200	.640	12.00	.31	0.0	TP.322	**CK20**	**STC11**	1/8
left hand										
E10MCTFPL2	.625	.770	.406	6.00	.22	0.0	TP.221	**CK19**	**STC9**	3/32
E12QCTFPL3	.750	.930	.500	7.00	.28	0.0	TP.322	**CK7**	**STC9**	3/32
E12SCTFPL3	.750	.930	.500	10.00	.28	0.0	TP.322	**CK7**	**STC9**	3/32
E16TCTFPL3	1.000	1.200	.640	12.00	.31	0.0	TP.322	**CK20**	**STC11**	1/8



DeVibrator shank.
See pages B86–B87 and
B130 for inserts.

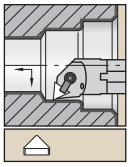


B-CTFP 0°

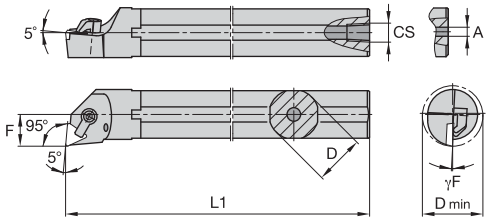





catalog number	D	D min	F	L1	L1 min	γF°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
B10CTFPR2	.625	.770	.406	10.00	5.25	0.0	TP.221	**–**	**–**	–	**CK19**	**STC9**	3/32
B12CTFPR3	.750	.930	.500	10.00	5.75	0.0	TP.322	**–**	**–**	–	**CK7**	**STC9**	3/32
B14CTFPR3	.875	1.060	.516	10.00	6.25	0.0	TP.322	**–**	**–**	–	**CK20**	**STC11**	1/8
B16CTFPR3	1.000	1.200	.640	12.00	6.50	0.0	TP.322	**–**	**–**	–	**CK20**	**STC11**	1/8
B20CTFPR3	1.250	1.470	.765	14.00	8.25	-3.0	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
B24CTFPR4	1.500	1.760	.890	15.50	9.75	-3.0	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
B28CTFPR4	1.750	2.010	1.015	18.50	10.75	-3.0	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC8**	5/32
B32CTFPR4	2.000	2.400	1.281	21.50	12.25	-3.0	TP.432	**SM37**	**S125**	3/32	**CK9**	**STC4**	5/32



Steel shank with through coolant.
See pages B86–B87 and
B130 for inserts.



A-CTLP -5°



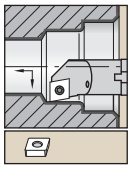

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	clamp	clamp screw	hex (inch)
right hand											
A06CTLPR2	.375	.480	.250	6.00	.13	—	-3.0	TP.2151	**CK27**	**STC27**	5/64
A08CTLPR2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	TP.221	**CK27**	**STC27**	5/64
A12CTLPR3	.750	.930	.500	10.00	—	1/8-27 NPT	0.0	TP.322	**CK7**	**STC9**	3/32
A16CTLPR3	1.000	1.220	.640	12.00	—	1/4-18 NPT	0.0	TP.322	**CK20**	**STC11**	1/8
left hand											
A06CTLPL2	.375	.480	.250	6.00	.13	—	-3.0	TP.2151	**CK27**	**STC27**	5/64
A08CTLPL2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	TP.221	**CK27**	**STC27**	5/64
A10CTLPL2	.625	.770	.406	10.00	.16	1/8-27 NPT	-3.0	TP.221	**CK19**	**STC9**	3/32
A12CTLPL3	.750	.930	.500	10.00	—	1/8-27 NPT	0.0	TP.322	**CK7**	**STC9**	3/32
A16CTLPL3	1.000	1.220	.640	12.00	—	1/4-18 NPT	0.0	TP.322	**CK20**	**STC11**	1/8

Looking for a product that's not shown in this catalog?
Check the Kennametal website!

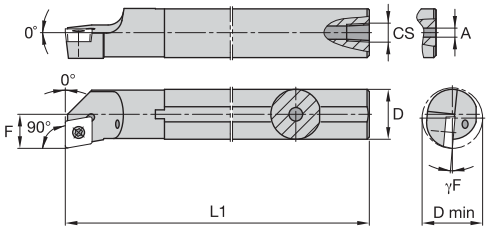


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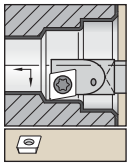


Steel shank with through coolant.
See pages B88–B91 for inserts.

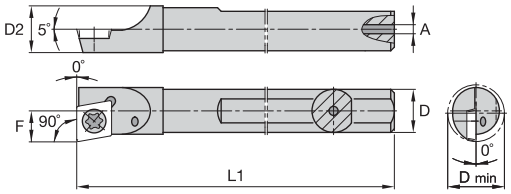


A-SCFC 0°

catalog number	D	D min	D2	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
A06MSCFCR2	.375	.480	—	.250	6.00	.13	—	-8.0	CC..2151	**MS1153**	T7
A08RSCFCR2	.500	.600	—	.312	8.00	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
A10SSCFCR2	.625	.770	—	.406	10.00	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
A12SSCFCR3	.750	.930	—	.500	10.00	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
A16TSCFCR3	1.000	1.200	—	.640	12.00	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15
left hand											
A08RSCFCL2	.500	.600	—	.312	8.00	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
A10SSCFCL2	.625	.770	—	.406	10.00	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
A12SSCFCL3	.750	.930	—	.500	10.00	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
A16TSCFCL3	1.000	1.200	—	.640	12.00	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15

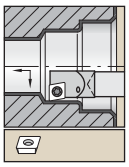


Steel shank with through coolant.
See pages B91–B92 for inserts.

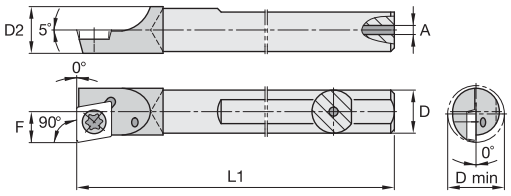


A-SCFD 0°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
A03XSCFDR12	.188	.234	.203	.122	2.50	.040	CD..120605	**CC09**	T6
A04FSCFDR12	.250	.292	.260	.152	3.00	.040	CD..120605	**CC11**	T6

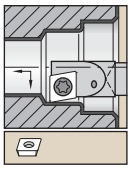


Carbide shank with through coolant.
See pages B91–B92 for inserts.

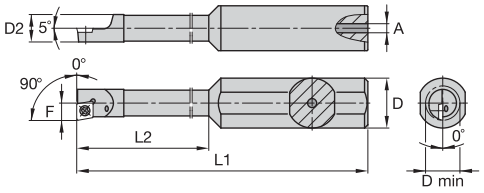


E-SCFD 0°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E03HSCFDR12	.188	.224	.193	.117	4.00	.040	CD..120605	**CC11**	T6
E03MSCFDR12	.188	.224	.193	.117	6.00	.040	CD..120605	**CC11**	T6
E04HSCFDR12	.250	.292	.258	.152	4.00	.047	CD..120605	**CC11**	T6
E04MSCFDR12	.250	.292	.258	.152	6.00	.047	CD..120605	**CC11**	T6
E05MSCFDR12	.312	.356	.322	.185	6.00	.093	CD..120605	**CC11**	T6
left hand									
E04HSCFDL12	.250	.292	.258	.152	4.00	.047	CD..120605	**CC11**	T6

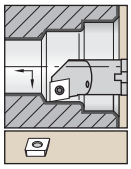


Necked steel shank with through coolant.
See pages B91–B92 for inserts.

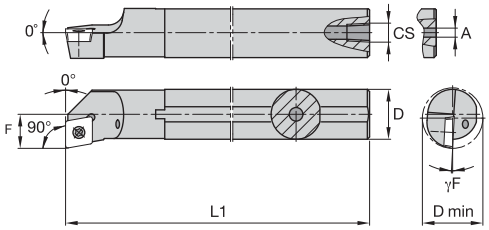


A-SCFD 0°

catalog number	D	D min	D2	F	L1	L2	A	gage insert	insert screw	Torx
right hand										
A0406XSCFDR12125	.375	.292	.260	.152	2.50	1.25	.040	CD..120605	**CC11**	T6
A0408XSCFDR12075	.500	.292	.260	.152	2.75	.75	.040	CD..120605	**CC11**	T6



Steel shank with through coolant.
See pages B92–B95 for inserts.

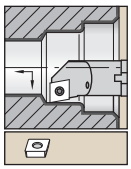


A-SCFP 0°

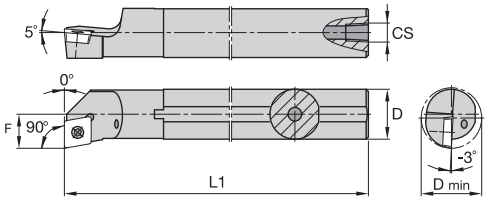


catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06SCFPR2	.375	.480	.250	6.00	.13	—	-4.0	CP..2151	**MS1153**	T7
A08SCFPR2	.500	.600	.312	8.00	—	1/16-27 NPT	-2.0	CP..2151	**MS1153**	T7
A10SCFPR2	.625	.770	.406	10.00	—	1/8-27 NPT	0.0	CP..2151	**MS1153**	T7
A12SCFPR3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A16SCFPR3	1.000	1.200	.640	12.00	—	1/4-18 NPT	0.0	CP..3252	**MS1155**	T15
left hand										
A06SCFPL2	.375	.480	.250	6.00	.13	—	-4.0	CP..2151	**MS1153**	T7
A08SCFPL2	.500	.600	.312	8.00	—	1/16-27 NPT	-2.0	CP..2151	**MS1153**	T7
A10SCFPL2	.625	.770	.406	10.00	—	1/8-27 NPT	0.0	CP..2151	**MS1153**	T7
A12SCFPL3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A16SCFPL3	1.000	1.200	.640	12.00	—	1/4-18 NPT	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.
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.



Steel shank with through coolant.
See pages B92–B95 for inserts.

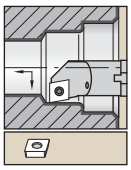


A-SCFP-A 0°

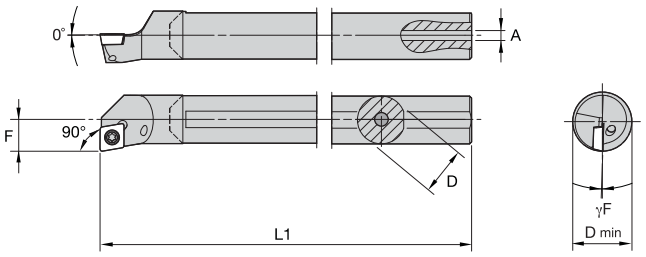


catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A12SCFPR3AP5	.750	.930	.500	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A16SCFPR3AP5	1.000	1.190	.625	12.000	1/4-18 NPT	CP..3252	**MS1027**	T9
left hand								
A12SCFPL3AP5	.750	.930	.500	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A16SCFPL3AP5	1.000	1.190	.625	12.000	1/4-18 NPT	CP..3252	**—**	T9

NOTE: 90° countersunk hole insert (i.e., CPGM/CPG1332.5).
ANSI/ISO compatible 60° countersunk hole.
Insert (i.e., CPMT/CPGT/CPGW 32.5) does not fit this tool.



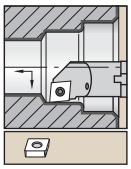
Heavy metal bar with through coolant.
See pages B92–B95 for inserts.



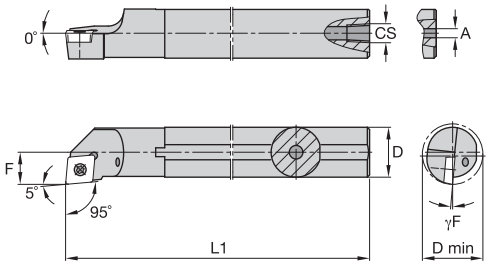
L-SCFP 0°

catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
L06MSCFPR2	.375	.480	.250	6.059	.125	-4.0	CP..2151..	**MS1939**	T7
L08RSCFPR2	.500	.600	.312	7.928	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCFPR2	.625	.770	.406	7.992	.156	0.0	CP..2151..	**MS1153**	T7
L12RSCFPR3	.750	.930	.500	7.960	.156	-2.0	CP..3252..	**MS1155**	T15
L16SSCFPR3	1.000	1.200	.640	9.941	.250	0.0	CP..3252..	**MS1155**	T15
left hand									
L06MSCFPL2	.375	.480	.250	6.059	.125	-4.0	CP..2151..	**MS1939**	T7
L08RSCFPL2	.500	.600	.312	7.928	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCFPL2	.625	.770	.406	7.992	.156	0.0	CP..2151..	**MS1153**	T7
L12RSCFPL3	.750	.930	.500	7.960	.156	-2.0	CP..3252..	**MS1155**	T15

NOTE: ANSI/ISO compatible 68° countersunk hole insert.
This tool will accept CPGM/CPGT/CPGW 21.5°_inserts.
ANSI/ISO compatible 60° countersunk hole inserts (i.e., CPMT/CPGT/CPGW 32.5).
90° countersunk hole inserts (i.e., CPGM/CPGB 32.5) do not fit this tool.

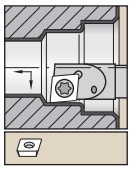


Steel shank with through coolant.
See pages B88–B91 for inserts.

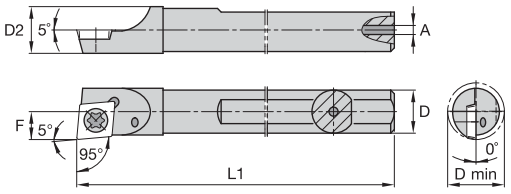


A-SCLC -5°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06MSCLCR2	.375	.480	.250	6.000	.13	—	-8.0	CC..2151	**MS1939**	T7
A08RSCLCR2	.500	.600	.312	8.000	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
A10SSCLCR2	.625	.770	.406	10.000	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
A10SSCLCR3	.625	.770	.406	10.000	—	1/8-27 NPT	-8.0	CC..3252	**MS1155**	T15
A12SSCLCR3	.750	.930	.500	10.000	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
A16TSCLCR3	1.000	1.200	.640	12.000	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15
left hand										
A06MSCLCL2	.375	.480	.250	6.000	.13	—	-8.0	CC..2151	**MS1939**	T7
A08RSCLCL2	.500	.600	.312	8.000	—	1/16-27 NPT	-7.0	CC..2151	**MS1153**	T7
A10SSCLCL2	.625	.770	.406	10.000	—	1/8-27 NPT	-5.0	CC..2151	**MS1153**	T7
A10SSCLCL3	.625	.770	.406	10.000	—	1/8-27 NPT	-8.0	CC..3252	**MS1155**	T15
A12SSCLCL3	.750	.930	.500	10.000	—	1/8-27 NPT	-5.0	CC..3252	**MS1155**	T15
A16TSCLCL3	1.000	1.200	.640	12.000	—	1/4-18 NPT	-4.0	CC..3252	**MS1155**	T15

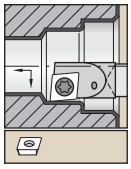


Steel shank with through coolant.
See pages B91–B92 for inserts.

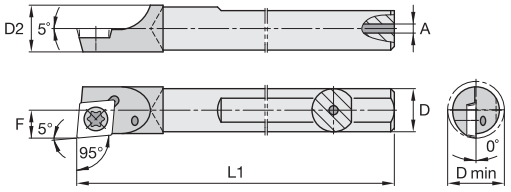


A-SCLD -5°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A03XSCLDR12A	.188	.204	.180	.104	2.50	.040	CD..120605	**CC09**	T6
A03XSCLDR12	.188	.230	.203	.116	2.50	.040	CD..120605	**CC09**	T6
A04FSCLDR12	.250	.285	.260	.145	3.00	.040	CD..120605	**CC11**	T6
left hand									
A03XSCLDL12	.188	.230	.203	.116	2.50	.040	CD..120605	**CC09**	T6
A04FSCLDL12	.250	.285	.260	.145	3.00	.040	CD..120605	**CC11**	T6

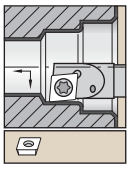


Carbide shank with through coolant.
See pages B91–B92 for inserts.

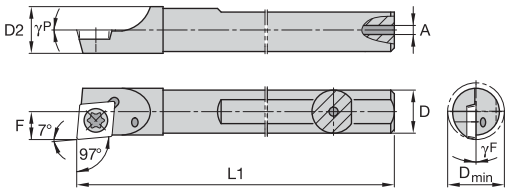


E-SCLD -5°

catalog number	D	D min	D2	F	L1	L2	A	gage insert	insert screw	Torx
right hand										
E03HSCLDR12A	.187	.218	–	.111	4.00	.42	.040	CD..120605	**CC09**	T6
E03HSCLDR12	.187	.224	–	.117	4.00	.42	.040	CD..120605	**CC09**	T6
E03MSCLDR12	.188	.224	.189	.117	6.00	–	.040	CD..120605	**CC09**	T6
E03MSCLDR12A	.188	.218	.193	.111	6.00	–	.040	CD..120605	**CC09**	T6
E04HSCLDR12	.250	.285	.260	.145	4.00	.48	.047	CD..120605	**CC11**	T6
E04MSCLDR12	.250	.285	–	.145	6.00	.48	.047	CD..120605	**CC11**	T6
E05MSCLDR12	.312	.356	–	.185	6.00	.54	.093	CD..120605	**CC11**	T6
left hand										
E03MSCLDL12	.188	.224	.189	.117	6.00	–	.040	CD..120605	**CC09**	T6
E03HSCLDL12A	.188	.218	.193	.111	4.00	–	.040	CD..120605	**CC09**	T6
E03MSCLDL12A	.188	.218	.193	.111	6.00	–	.040	CD..120605	**CC09**	T6
E03HSCLDL12	.188	.224	.193	.117	4.00	–	.040	CD..120605	**CC09**	T6
E04MSCLDL12	.250	.285	.258	.145	6.00	–	.047	CD..120605	**CC11**	T6
E04HSCLDL12	.250	.285	.263	.145	4.00	.48	.047	CD..120605	**CC11**	T6
E05MSCLDL12	.312	.356	.322	.185	6.00	–	.093	CD..120605	**CC11**	T6

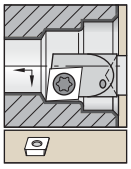


Steel shank with through coolant.
See page B91 for inserts.

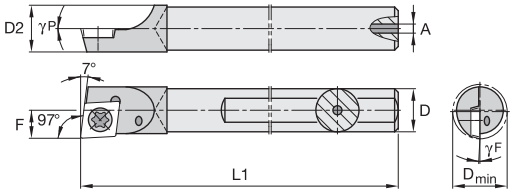


A-SC7D -7°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand **A03XSC7DR12**	.188	.180	.165	.095	2.50	.040	CDHB120605	**CC09**	T6
left hand **A03XSC7DL12**	.188	.180	.165	.095	2.50	.040	CDHB120605	**CC09**	T6

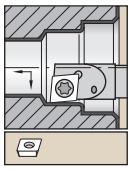


Carbide shank with through coolant.
See pages B91–B92 for inserts.

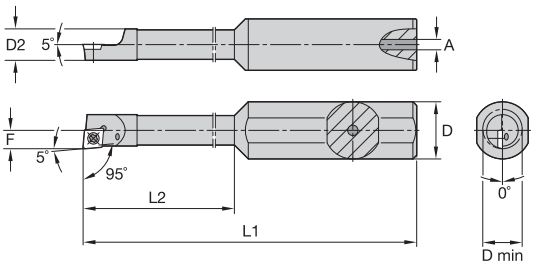


E-SC7D -7°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand **E25MSC7DR12**	.156	.180	.165	.095	6.00	.039	CD..120605	**CC09**	T6
left hand **E25MSC7DL12**	.156	.180	.165	.095	6.00	.039	CD..120605	**CC09**	T6

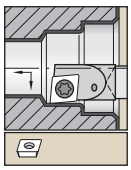


Necked steel shank with through coolant.
See pages B91–B92 for inserts.

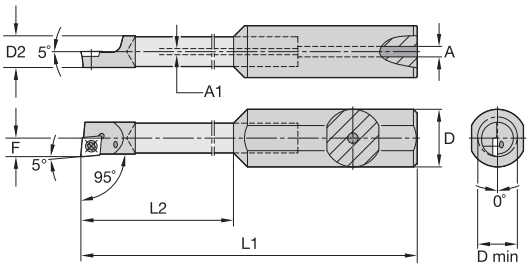


A-SCLD -5°

catalog number	D	D min	D2	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand											
A2906XSCLDR1205	.375	.204	.180	.104	2.50	.50	.040	0.0	CD..120605	**CC09**	T6
A2906XSCLDR121	.375	.204	.180	.104	2.50	1.00	.040	0.0	CD..120605	**CC09**	T6
A0306SCLDR12	.375	.243	.193	.126	3.50	1.00	.078	-4.0	CD..12061	**MS1454**	T5
A3206XSCLDR1205	.375	.228	.203	.116	2.50	.50	.040	0.0	CD..120605	**CC11**	T6
A3206XSCLDR121	.375	.228	.203	.116	2.50	1.00	.040	0.0	CD..120605	**CC11**	T6
A0406SCLDR12	.375	.300	.234	.156	4.00	1.25	.078	-1.0	CD..12061	**MS1454**	T5
A0406XSCLDR12075	.375	.285	.260	.145	2.50	.75	.040	0.0	CD..120605	**CC11**	T6
A0406XSCLDR12125	.375	.285	.260	.145	2.50	1.25	.040	0.0	CD..120605	**CC11**	T6
left hand											
A0306SCLDL12	.375	.243	.193	.126	3.50	1.00	.078	-4.0	CD..12061	**MS1454**	T5
A0406SCLDL12	.375	.300	.234	.156	4.00	1.25	.078	-1.0	CD..12061	**MS1454**	T5

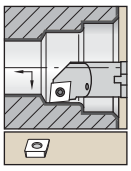


Necked carbide shank with through coolant.
See pages B91–B92 for inserts.

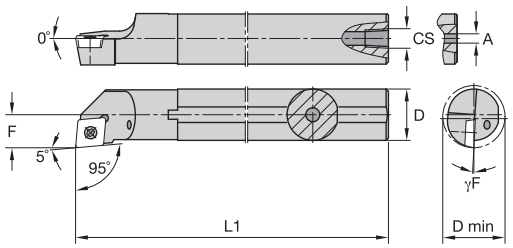


E-SCLD -5°

catalog number	D	D min	D2	F	L1	L2	A	A1	gage insert	insert screw	Torx
right hand											
E3208XSCLDR121	.500	.234	.187	.119	2.50	1.00	.13	.047	CD..120605	**CC09**	T6
E0408HSCLDR1225	.500	.285	.258	.145	4.00	2.50	.13	.047	CD..120605	**CC11**	T6
E2910XSCLDR12088	.625	.208	.189	.104	3.38	.88	.13	.047	CD..120605	**CC09**	T6
E3210KSCLDR122	.625	.234	.210	.119	4.50	2.00	.13	.047	CD..120605	**CC09**	T6
E0410HSCLDR12125	.625	.285	.258	.145	3.75	1.25	.13	.047	CD..120605	**CC11**	T6



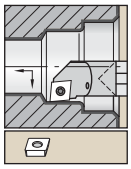
Steel shank with through coolant.
See pages B92–B95 for inserts.



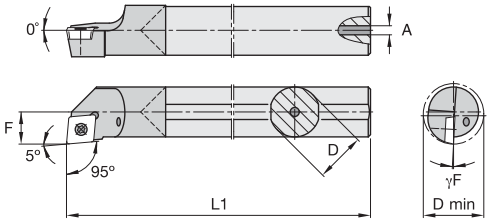
A-SCLP -5°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06SCLPR2	.375	.480	.250	6.00	.13	—	-6.0	CP..2151	**MS1153**	T7
A08SCLPR2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	CP..2151	**MS1153**	T7
A10SCLPR2	.625	.770	.406	10.00	—	1/8-27 NPT	-2.0	CP..2151	**MS1153**	T7
A10SCLPR3	.625	.770	.406	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A12SCLPR3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A16SCLPR3	1.000	1.200	.640	12.00	—	1/4-18 NPT	0.0	CP..3252	**MS1155**	T15
left hand										
A06SCLPL2	.375	.480	.250	6.00	.13	—	-6.0	CP..2151	**MS1153**	T7
A08SCLPL2	.500	.600	.312	8.00	—	1/16-27 NPT	-3.0	CP..2151	**MS1153**	T7
A10SCLPL2	.625	.770	.406	10.00	—	1/8-27 NPT	-2.0	CP..2151	**MS1153**	T7
A10SCLPL3	.625	.770	.406	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A12SCLPL3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15
A16SCLPL3	1.000	1.200	.640	12.00	—	1/4-18 NPT	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.
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.



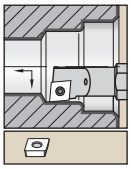
Carbide shank with through coolant.
See pages B92–B95 for inserts.



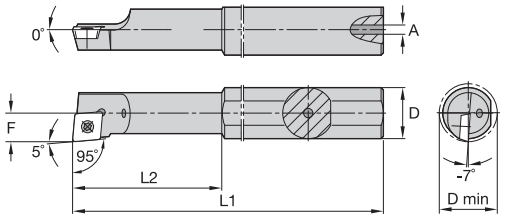
E-SCLP -5°

catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E05KSCLPR18	.313	.415	.219	5.000	.093	-5.0	CP..18151	**MS1933**	T7
E06SCLPR2	.375	.480	.250	6.000	.125	-6.0	CP..2151	**MS1939**	T7
E08SCLPR2	.500	.600	.312	8.000	.187	-2.0	CP..2151	**MS1153**	T7
E10SCLPR2	.625	.770	.406	10.000	.218	-2.0	CP..2151	**MS1153**	T7
E10SCLPR3	.625	.770	.406	10.000	.218	-2.0	CP..3252	**MS1155**	T15
E12SCLPR2	.750	.930	.500	10.000	.281	-2.0	CP..2151	**MS1153**	T7
E12SCLPR3	.750	.930	.500	10.000	.281	-2.0	CP..3252	**MS1155**	T15
E16SCLPR3	1.000	1.200	.640	12.000	.312	0.0	CP..3252	**MS1155**	T15
left hand									
E05KSCLPL18	.313	.415	.219	5.000	.093	-5.0	CP..18151	**MS1933**	T7
E06SCLPL2	.375	.480	.250	6.000	.125	-6.0	CP..2151	**MS1939**	T7
E08SCLPL2	.500	.600	.312	8.000	.187	-2.0	CP..2151	**MS1153**	T7
E10SCLPL2	.625	.770	.406	10.000	.218	-2.0	CP..2151	**MS1153**	T7
E10SCLPL3	.625	.770	.406	10.000	.218	-2.0	CP..3252	**MS1155**	T15
E12SCLPL2	.750	.930	.500	10.000	.281	-2.0	CP..2151	**MS1153**	T7
E12SCLPL3	.750	.930	.500	10.000	.281	-2.0	CP..3252	**MS1155**	T15
E16SCLPL3	1.000	1.200	.640	12.000	.312	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.
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.

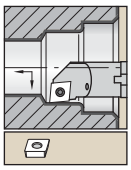


Necked steel shank with through coolant.
See pages B92–B95 for inserts.

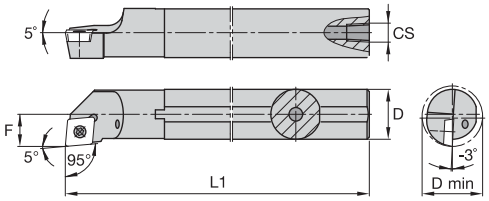


A-SCLP -5°

catalog number	D	D min	F	L1	L2	A	gage insert	insert screw	Torx
right hand									
A0506SCLPR18	.375	.415	.219	5.00	1.63	.094	CP..18151	**MS1152**	T7
left hand									
A0506SCLPL18	.375	.415	.219	5.00	1.63	.094	CP..18151	**MS1152**	T7



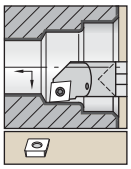
Steel shank with through coolant.
See pages B92–B95 for inserts.



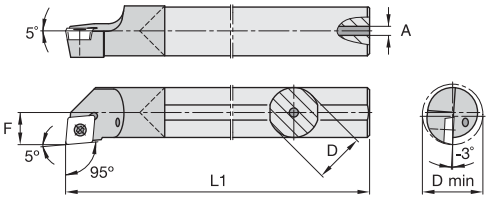
A-SCLP-AP -5°

catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A10SCLPR3AP5	.625	.770	.406	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A12SCLPR3AP5	.750	.930	.500	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A16SCLPR3AP5	1.000	1.190	.625	12.000	1/4-18 NPT	CP..3252	**MS1027**	T9
left hand								
A10SCLPL3AP5	.625	.770	.406	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A12SCLPL3AP5	.750	.930	.500	10.000	1/8-27 NPT	CP..3252	**MS1027**	T9
A16SCLPL3AP5	1.000	1.190	.625	12.000	1/4-18 NPT	CP..3252	**MS1027**	T9

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



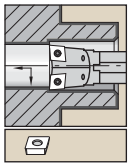
Carbide shank with through coolant.
See pages B92–B95 for inserts.



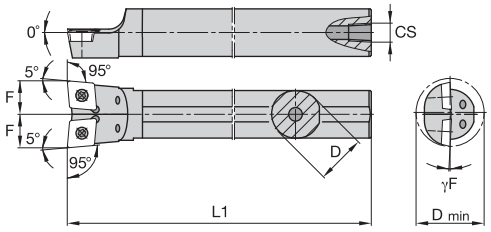
E-SCLP-AP -5°

catalog number	D	D min	F	L1	A	gage insert	insert screw	insert screw wrench size
right hand								
E12SCLPR3AP5	.750	1.000	.500	10.000	.281	CP..3252	**MS1027**	T9
E16SCLPR3AP5	1.000	1.190	.625	12.000	.312	CP..3252	**MS1027**	T9
left hand								
E12SCLPL3AP5	.750	1.000	.500	10.000	.281	CP..3252	**MS1027**	T9
E16SCLPL3AP5	1.000	1.190	.625	12.000	.312	CP..3252	**MS1027**	T9

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



Steel shank with through coolant.
See pages B92–B95 for inserts.

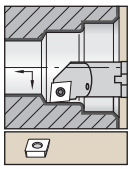


A-SCLP-D -5°

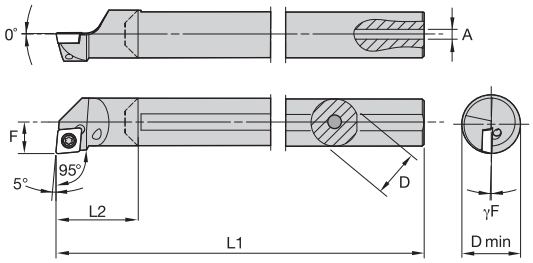


catalog number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
A08SCLPR2D	.500	.650	.312	8.00	1/16-27 NPT	-3.0	CP..2151	**MS1153**	T7
A10SCLPR2D	.625	.842	.406	10.00	1/8-27 NPT	-2.0	CP..2151	**MS1153**	T7
A12SCLPR3D	.750	1.030	.500	10.00	1/8-27 NPT	-2.0	CP..3252	**MS1155**	T15

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



Heavy metal bar with through coolant.
See pages B92–B95 for inserts.

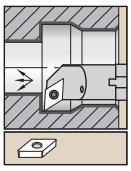


L-SCLP -5°

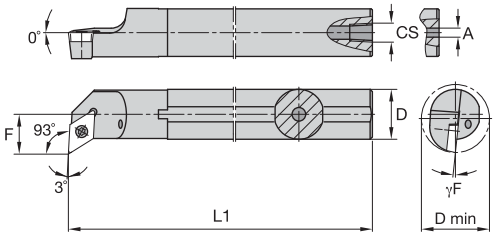


catalog number	D	D min	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand										
L05MSCLPR2	.313	.415	.219	5.995	.76	.094	-6.0	CP..2151..	**MS1939**	T7
L06MSCLPR2	.375	.480	.250	6.059	.91	.125	-6.0	CP..2151..	**MS1939**	T7
L08RSCLPR2	.500	.600	.312	7.928	.93	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCLPR2	.625	.770	.406	7.992	1.03	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCLPR3	.625	.770	.406	8.012	1.05	.156	-2.0	CP..3252..	**MS1155**	T15
L12RSCLPR3	.750	.930	.500	7.960	1.30	.156	-2.0	CP..3252..	**MS1155**	T15
L16SSCLPR3	1.000	1.200	.640	9.941	1.41	.250	0.0	CP..3252..	**MS1155**	T15
left hand										
L05MSCLPL2	.313	.415	.219	5.995	.76	.094	-6.0	CP..2151..	**MS1939**	T7
L06MSCLPL2	.375	.480	.250	6.059	.91	.125	-6.0	CP..2151..	**MS1939**	T7
L08RSCLPL2	.500	.600	.312	7.928	.93	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCLPL2	.625	.770	.406	7.992	1.03	.156	-2.0	CP..2151..	**MS1153**	T7
L10RSCLPL3	.625	.770	.406	8.012	1.05	.156	-2.0	CP..3252..	**MS1155**	T15
L12RSCLPL3	.750	.930	.500	7.960	1.30	.156	-2.0	CP..3252..	**MS1155**	T15
L16SSCLPL3	1.000	1.200	.640	9.941	1.41	.250	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.
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.

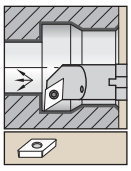


Steel shank with through coolant.
See pages B95–B98 for inserts.

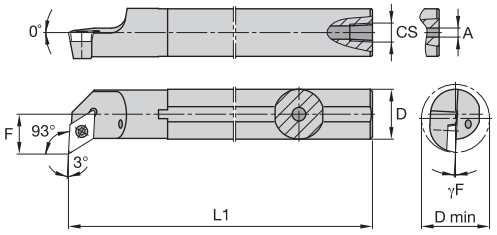


A-SDUC -3°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06MSDUCR2	.375	.600	.375	6.000	.125	—	-7.0	DC..2151	**MS1153**	T7
A08RSDUCR2	.500	.730	.437	8.000	—	1/16-27 NPT	-5.0	DC..2151	**MS1153**	T7
A10SSDUCR2	.625	.850	.500	10.000	—	1/8-27 NPT	-4.0	DC..2151	**MS1153**	T7
A12SSDUCR3	.750	.980	.562	10.000	—	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
A16TSDUCR3	1.000	1.300	.750	12.000	—	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15
left hand										
A06MSDUCL2	.375	.600	.375	6.000	.125	—	-7.0	DC..2151	**MS1153**	T7
A08SDUCL2	.500	.730	.437	8.000	—	1/16-27 NPT	-5.0	DC..2151	**MS1153**	T7
A10SSDUCL2	.625	.850	.500	10.000	—	1/8-27 NPT	-4.0	DC..2151	**MS1153**	T7
A12SSDUCL3	.750	.980	.562	10.000	—	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
A16TSDUCL3	1.000	1.300	.750	12.000	—	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15

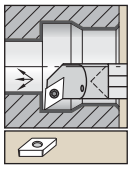


Steel shank with through coolant.
See pages B98–B100 for inserts.

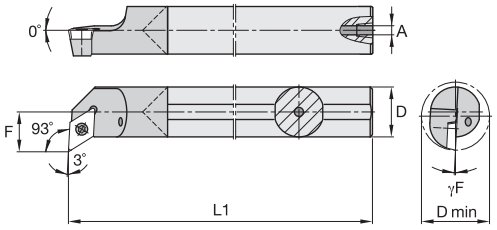


A-SDUP -3°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06MSDUPR2	.375	.600	.375	6.000	.125	—	-3.0	DP..2151	**MS1153**	T7
A08RSDUPR2	.500	.730	.437	8.000	—	1/16-27 NPT	0.0	DP..2151	**MS1153**	T7
A10SSDUPR2	.625	.850	.500	10.000	—	1/8-27 NPT	0.0	DP..2151	**MS1153**	T7
A12SSDUPR3	.750	.980	.562	10.000	—	1/8-27 NPT	0.0	DP..3252	**MS1155**	T15
A16TSDUPR3	1.000	1.300	.750	12.000	—	1/4-18 NPT	0.0	DP..3252	**MS1155**	T15
left hand										
A06MSDUPL2	.375	.600	.375	6.000	.125	—	-3.0	DP..2151	**MS1153**	T7
A08RSDUPL2	.500	.730	.437	8.000	—	1/16-27 NPT	0.0	DP..2151	**MS1153**	T7
A10SSDUPL2	.625	.850	.500	10.000	—	1/8-27 NPT	0.0	DP..2151	**MS1153**	T7
A12SSDUPL3	.750	.980	.562	10.000	—	1/8-27 NPT	0.0	DP..3252	**MS1155**	T15
A16TSDUPL3	1.000	1.300	.750	12.000	—	1/4-18 NPT	0.0	DP..3252	**MS1155**	T15

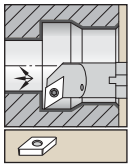


Carbide shank with through coolant.
See pages B98–B100 for inserts.

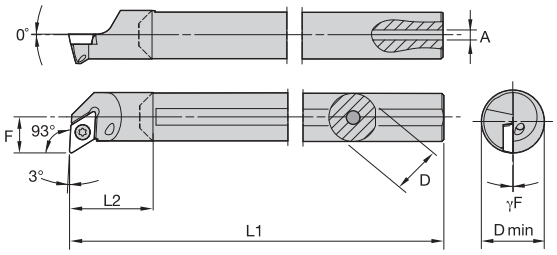


E-SDUP -3°

catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E06SDUPR2	.375	.600	.375	6.000	.125	-2.0	DP..2151	**MS1153**	T7
E08SDUPR2	.500	.730	.437	8.000	.187	0.0	DP..2151	**MS1153**	T7
E10SDUPR2	.625	.850	.500	10.000	.218	0.0	DP..2151	**MS1153**	T7
E12SDUPR2	.750	.980	.562	10.000	.281	0.0	DP..2151	**MS1153**	T7
E12SSDUPR3	.750	.980	.562	10.000	.281	0.0	DP..3252	**MS1155**	T15
E16TSDUPR3	1.000	1.300	.750	12.000	.312	0.0	DP..3252	**MS1155**	T15
left hand									
E06SDUPL2	.375	.600	.375	6.000	.125	-2.0	DP..2151	**MS1153**	T7
E08SDUPL2	.500	.730	.437	8.000	.187	0.0	DP..2151	**MS1153**	T7
E10SDUPL2	.625	.850	.500	10.000	.218	0.0	DP..2151	**MS1153**	T7
E12SDUPL2	.750	.980	.562	10.000	.281	0.0	DP..2151	**MS1153**	T7
E12SSDUPL3	.750	.980	.562	10.000	.281	0.0	DP..3252	**MS1155**	T15
E16TSDUPL3	1.000	1.300	.750	12.000	.312	0.0	DP..3252	**MS1155**	T15

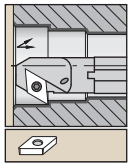


Heavy metal bar with through coolant.
See pages B98–B100 for inserts.

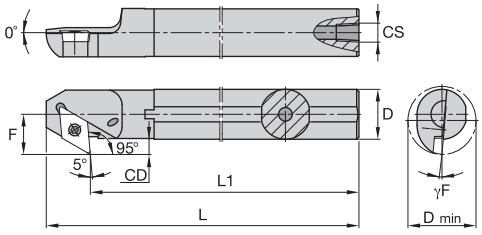


L-SDUP -3°

catalog number	D	D min	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand										
L06MSDUPR2	.375	.600	.375	6.059	.91	.125	-2.0	DP..2151..	**MS1153**	T7
L08RSDUPR2	.500	.730	.437	7.928	.93	.156	0.0	DP..2151..	**MS1153**	T7
L10RSDUPR2	.625	.850	.500	7.992	1.03	.156	0.0	DP..2151..	**MS1153**	T7
L12RSDUPR3	.750	.980	.562	7.960	1.30	.156	0.0	DP..3252..	**MS1155**	T15
left hand										
L06MSDUPL2	.375	.600	.375	6.059	.91	.125	-2.0	DP..2151..	**MS1153**	T7
L08RSDUPL2	.500	.730	.437	7.928	.93	.156	0.0	DP..2151..	**MS1153**	T7
L10RSDUPL2	.625	.850	.500	7.992	1.03	.156	0.0	DP..2151..	**MS1153**	T7
L12RSDUPL3	.750	.980	.562	7.960	1.30	.156	0.0	DP..3252..	**MS1155**	T15



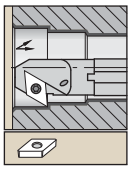
Steel shank with through coolant.
See pages B95–B98 for inserts.



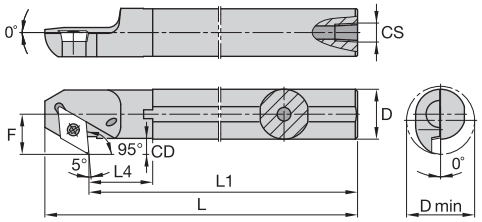
A-SDXC -5°



catalog number	D	D min	F	L1	CD	L	CS	γF°	gage insert	insert screw	Torx
right hand											
A08RSDXCR2	.500	.730	.437	8.00	.187	8.50	1/16-27 NPT	-6.0	DC..2151	**MS1153**	T7
A10SSDXCR2	.625	.850	.500	10.00	.187	10.50	1/8-27 NPT	-5.0	DC..2151	**MS1153**	T7
A12SSDXCR3	.750	.980	.562	10.00	.187	10.63	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
A16TSDXCR3	1.000	1.300	.750	12.00	.250	12.63	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15
left hand											
A08RSDXCL2	.500	.730	.437	8.00	.187	8.50	1/16-27 NPT	-6.0	DC..2151	**MS1153**	T7
A10SSDXCL2	.625	.850	.500	10.00	.187	10.50	1/8-27 NPT	-5.0	DC..2151	**MS1153**	T7
A12SSDXCL3	.750	.980	.562	10.00	.187	10.63	1/8-27 NPT	-5.0	DC..3252	**MS1155**	T15
A16TSDXCL3	1.000	1.300	.750	12.00	.250	12.63	1/4-18 NPT	-3.0	DC..3252	**MS1155**	T15



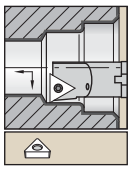
Steel shank with through coolant.
See pages B98–B100 for inserts.



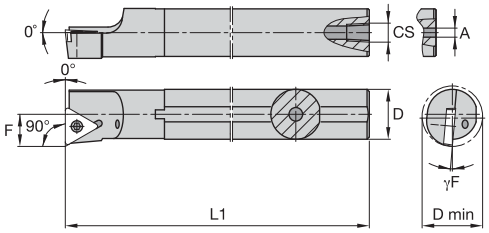
A-SDXP-5°



catalog number	D	D min	F	L1	L	L4	CD	CS	gage insert	insert screw	Torx
right hand											
A08RSDXPR2	.500	.730	.437	8.00	8.50	2.79	.187	1/16-27 NPT	DP..2151	**MS1153**	T7
A10SSDXPR2	.625	.850	.500	10.00	10.50	2.31	.187	1/8-27 NPT	DP..2151	**MS1153**	T7
A12SSDXPR3	.750	.980	.562	10.00	10.75	2.29	.187	1/8-27 NPT	DP..3252	**MS1155**	T15
A16TSDXPR3	1.000	1.300	.750	12.00	12.75	4.62	.250	1/4-18 NPT	DP..3252	**MS1155**	T15
left hand											
A08RSDXPL2	.500	.730	.437	8.00	8.50	2.79	.187	1/16-27 NPT	DP..2151	**MS1153**	T7
A10SSDXPL2	.625	.850	.500	10.00	10.50	2.31	.187	1/8-27 NPT	DP..2151	**MS1153**	T7
A12SSDXPL3	.750	.980	.562	10.00	10.75	2.29	.187	1/8-27 NPT	DP..3252	**MS1155**	T15
A16TSDXPL3	1.000	1.300	.750	12.00	12.75	4.62	.250	1/4-18 NPT	DP..3252	**MS1155**	T15

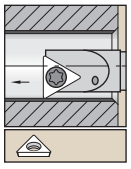


Steel shank with through coolant.
See pages B105–B108 for inserts.

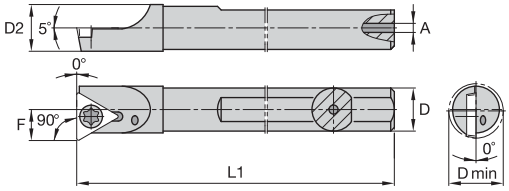


A-STFC 0°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06MSTFCR2	.375	.480	.250	6.00	.125	—	-8.0	TC..2151	**MS1153**	T7
A08RSTFCR2	.500	.600	.312	8.00	—	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
A10SSTFCR2	.625	.770	.406	10.00	—	1/8-27 NPT	-5.0	TC..2151	**MS1153**	T7
A12STFCR3	.750	.930	.500	10.00	—	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
A16STFCR3	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15
left hand										
A08RSTFCL2	.500	.600	.312	8.00	—	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
A10SSTFCL2	.625	.770	.406	10.00	—	1/8-27 NPT	-5.0	TC..2151	**MS1153**	T7
A12STFCL3	.750	.930	.500	10.00	—	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
A16STFCL3	1.000	1.200	.640	12.00	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15

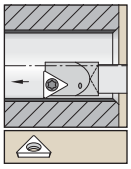


Steel shank with through coolant.
See page B109 for inserts.

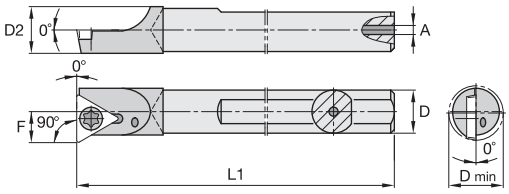


A-STFD 0°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A04HSTFDR128	.250	.296	.260	.156	4.00	.040	TDHB12807501	**FC14**	T7
A05HSTFDR128	.312	.358	.322	.187	4.00	.060	TDHB12807501	**FC14**	T7

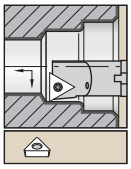


Carbide shank with through coolant.
See page B109 for inserts.

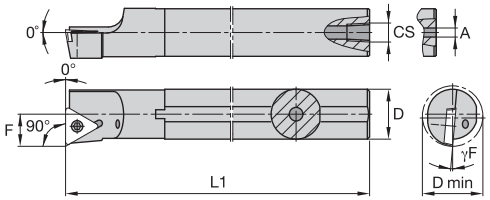


E-STFD 0°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E03HSTFDR128	.188	.275	.203	.134	4.00	.040	TD..12807505	**FC11**	T7
E04HSTFDR128	.250	.300	.260	.156	4.00	.047	TD..12807505	**FC11**	T7
E04MSTFDR128	.250	.300	.260	.156	6.00	.047	TD..12807505	**FC11**	T7
E05HSTFDR128	.313	.360	.322	.187	4.00	.093	TD..12807505	**FC11**	T7
E05MSTFDR128	.313	.360	.322	.187	6.00	.093	TD..12807505	**FC11**	T7



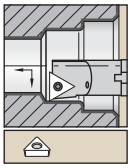
Steel shank with through coolant.
See pages B109–B112 for inserts.



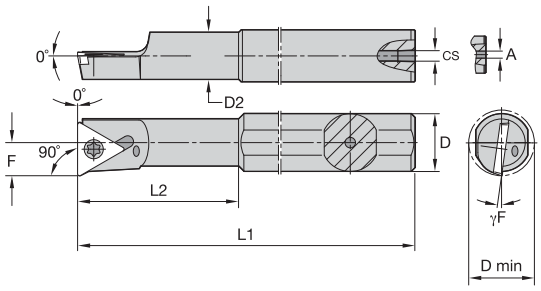
A-STFP 0°

catalog number	D	D min	D2	F	L1	L2	A	CS	γF°	gage insert	insert screw	Torx
right hand												
A05STFPR18	.313	.415	—	.219	5.00	—	.094	—	-8.0	TP..18151	**MS1933**	T7
A06STFPR2	.375	.480	—	.250	6.00	—	.125	—	-4.0	TP..2151	**MS1153**	T7
A08RSTFPR2	.500	.600	—	.312	8.00	—	—	1/16-27 NPT	-2.0	TP..2151	**MS1153**	T7
A10STFPR2	.625	.770	—	.406	10.00	—	—	1/8-27 NPT	0.0	TP..2151	**MS1153**	T7
A12STFPR3	.750	.930	—	.500	10.00	—	—	1/8-27 NPT	-2.0	TP..3252	**MS1155**	T15
A16STFPR3	1.000	1.200	—	.640	12.00	—	—	1/4-18 NPT	0.0	TP..3252	**MS1155**	T15
left hand												
A06STFPL2	.375	.480	—	.250	6.00	—	.125	—	-4.0	TP..2151	**MS1153**	T7
A08STFPL2	.500	.600	—	.312	8.00	—	—	1/16-27 NPT	-2.0	TP..2151	**MS1153**	T7
A12STFPL3	.750	.930	—	.500	10.00	—	—	1/8-27 NPT	-2.0	TP..3252	**MS1155**	T15

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



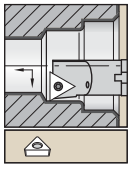
Steel shank with through coolant.
See pages B109–B112 for inserts.



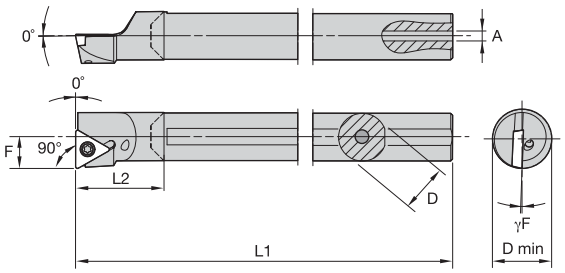
A-STFP 0°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A0506STFPR18	.375	.415	.219	5.000	.094	—	-8.0	TP..18151	**MS1152**	T7

NOTE: ANSI/ISO compatible 60° countersunk hole insert (i.e., CPMT/CPGT/CPGW32.5).
90° countersunk hole inserts (i.e., CPGM/CPGB 32.5) do not fit this tool.



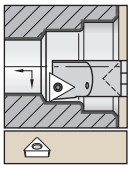
Heavy metal bar with through coolant.
See pages B109–B112 for inserts.



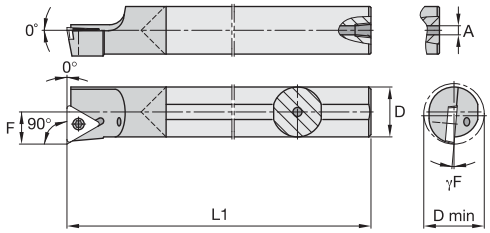
L-STFP 0°

catalog number	D	D min	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand										
L06MSTFPR2	.375	.480	.250	6.059	.91	.125	-4.0	TP..2151	**MS1153**	T7
L08RSTFPR2	.500	.600	.312	7.928	.93	.156	-2.0	TP..2151	**MS1153**	T7
L10RSTFPR2	.625	.770	.406	8.082	1.12	.156	0.0	TP..2151	**MS1153**	T7
L12RSTFPR3	.750	.930	.500	8.050	1.39	.156	-2.0	TP..3252	**MS1155**	T15
left hand										
L06MSTFPL2	.375	.480	.250	6.059	.91	.125	-4.0	TP..2151	**MS1153**	T7
L08RSTFPL2	.500	.600	.312	7.928	.93	.156	-2.0	TP..2151	**MS1153**	T7
L12RSTFPL3	.750	.930	.500	8.050	1.39	.156	-2.0	TP..3252	**MS1155**	T15

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



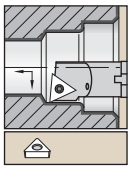
Carbide shank with through coolant.
See pages B109–B112 for inserts.



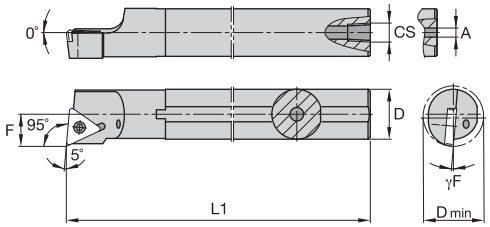
E-STFP 0°

catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E05STFPR18	.313	.415	.219	5.000	.093	-5.0	TP..18151	**MS1152**	T7
E06STFPR2	.375	.480	.250	6.000	.125	-4.0	TP..2151	**MS1153**	T7
E08STFPR2	.500	.600	.312	8.000	.187	-2.0	TP..2151	**MS1153**	T7
E10STFPR2	.625	.770	.406	10.000	.218	0.0	TP..2151	**MS1153**	T7
E12STFPR3	.750	.930	.500	10.000	.281	-2.0	TP..3252	**MS1155**	T15
E16STFPR3	1.000	1.200	.640	12.000	.312	0.0	TP..3252	**MS1155**	T15
left hand									
E05STFPL18	.313	.415	.219	5.000	.093	-5.0	TP..18151	**MS1152**	T7
E06STFPL2	.375	.480	.250	6.000	.125	-4.0	TP..2151	**MS1153**	T7
E08STFPL2	.500	.600	.312	8.000	.187	-2.0	TP..2151	**MS1153**	T7
E10STFPL2	.625	.770	.406	10.000	.218	0.0	TP..2151	**MS1153**	T7
E12STFPL3	.750	.930	.500	10.000	.281	-2.0	TP..3252	**MS1155**	T15
E16STFPL3	1.000	1.200	.640	12.000	.312	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.
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.

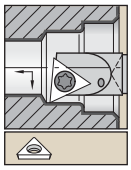


Steel shank with through coolant.
See pages B105–B108 for inserts.

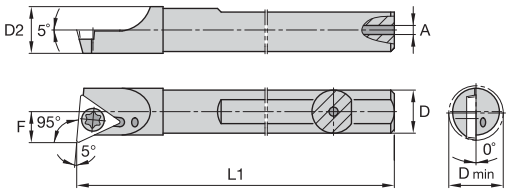


A-STLC -5°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06STLCR2	.375	.480	.250	6.000	.125	—	-8.0	TC..2151	**MS1153**	T7
A08STLCR2	.500	.600	.312	8.000	—	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
A10STLCR2	.625	.770	.406	10.000	—	1/8-27 NPT	-5.0	TC..2151	**MS1153**	T7
A12STLCR3	.750	.930	.500	10.000	—	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
A16STLCR3	1.000	1.200	.640	12.000	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15
left hand										
A06STLCL2	.375	.480	.250	6.000	.125	—	-8.0	TC..2151	**MS1153**	T7
A08STLCL2	.500	.600	.312	8.000	—	1/16-27 NPT	-7.0	TC..2151	**MS1153**	T7
A10STLCL2	.625	.770	.406	10.000	—	1/8-27 NPT	-5.0	TC..2151	**MS1153**	T7
A12STLCL3	.750	.930	.500	10.000	—	1/8-27 NPT	-5.0	TC..3252	**MS1155**	T15
A16STLCL3	1.000	1.200	.640	12.000	—	1/4-18 NPT	-4.0	TC..3252	**MS1155**	T15

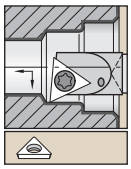


Steel shank with through coolant.
See page B109 for inserts.

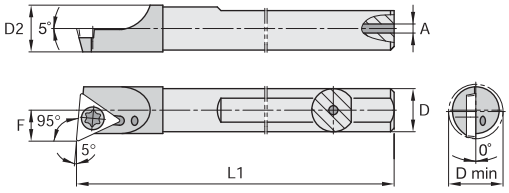


A-STLD -5°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A03GSTLDR128	.187	.275	.197	.126	3.50	.040	TD..12807505	**FC11**	T7
A04HSTLDR128	.250	.296	.260	.156	4.00	.040	TD..130805	**FC14**	T7
A05HSTLDR128	.313	.358	.322	.187	4.00	.060	TD..130805	**FC14**	T7

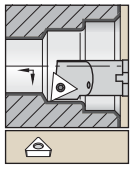


Carbide shank with through coolant.
See page B109 for inserts.

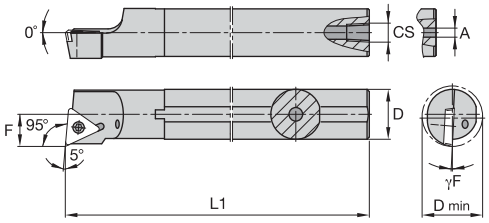


E-STLD -5°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E03HSTLDR128	.188	.275	.197	.126	4.000	.040	TD..12807505	**FC11**	T7
E03MSTLDR128	.188	.275	.197	.126	6.000	.040	TD..12807505	**FC11**	T7
E04HSTLDR128	.250	.296	.260	.156	4.000	.047	TD..130805	**FC14**	T7
E04MSTLDR128	.250	.300	.260	.156	6.000	.047	TD..12807505	**FC14**	T7
E05HSTLDR128	.312	.358	—	.187	4.000	.093	TD..130805	**FC14**	T7
E05MSTLDR128	.313	.360	.322	.187	6.000	.093	TD..12807505	**FC14**	T7
left hand									
E03HSTLDL128	.188	.275	.197	.126	4.000	.040	TD..12807505	**FC11**	T7
E04MSTLDL128	.250	.300	.260	.156	6.000	.047	TD..12807505	**FC14**	T7
E05MSTLDL128	.313	.360	.322	.187	6.000	.093	TD..12807505	**FC14**	T7



Steel shank with through coolant.
See pages B109–B112 for inserts.

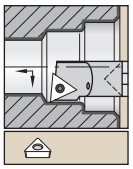


A-STLP -5°

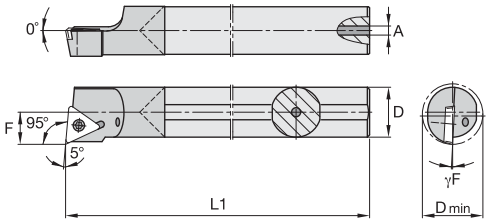


catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06STLPR2	.375	.480	.250	6.000	.125	—	-4.0	TP..2151	**MS1153**	T7
A08STLPR2	.500	.600	.312	8.000	—	1/16-27 NPT	-2.0	TP..2151	**MS1153**	T7
A10STLPR2	.625	.770	.406	10.000	—	1/8-27 NPT	0.0	TP..2151	**MS1153**	T7
A12STLPR3	.750	.930	.500	10.000	—	1/8-27 NPT	-2.0	TP..3252	**MS1155**	T15
A16STLPR3	1.000	1.220	.640	12.000	—	1/4-18 NPT	0.0	TP..3252	**MS1155**	T15
left hand										
A06STLPL2	.375	.480	.250	6.000	.125	—	-4.0	TP..2151	**MS1153**	T7
A08STLPL2	.500	.600	.312	8.000	—	1/16-27 NPT	-2.0	TP..2151	**MS1153**	T7
A10STLPL2	.625	.770	.406	10.000	—	1/8-27 NPT	0.0	TP..2151	**MS1153**	T7
A12STLPL3	.750	.930	.500	10.000	—	1/8-27 NPT	-2.0	TP..3252	**MS1155**	T15
A16STLPL3	1.000	1.220	.640	12.000	—	1/4-18 NPT	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.
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.



Carbide shank with through coolant.
See pages B109–B112 for inserts.

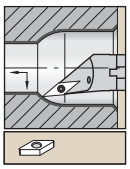


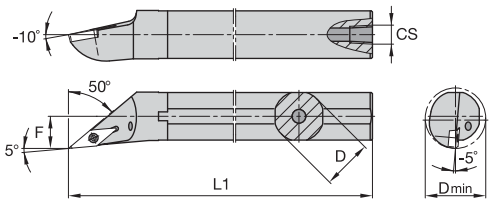
E-STLP -5°



catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E06STLPR2	.375	.480	.250	6.000	.125	-4.0	TP..2151	**MS1153**	T7
E08STLPR2	.500	.600	.312	8.000	.187	-2.0	TP..2151	**MS1153**	T7
E10STLPR2	.625	.770	.406	10.000	.218	0.0	TP..2151	**MS1153**	T7
E12STLPR3	.750	.930	.500	10.000	.281	-2.0	TP..3252	**MS1155**	T15
E16STLPR3	1.000	1.220	.640	12.000	.312	0.0	TP..3252	**MS1155**	T15
left hand									
E06STLPL2	.375	.480	.250	6.000	.125	-4.0	TP..2151	**MS1153**	T7
E08STLPL2	.500	.600	.312	8.000	.187	-2.0	TP..2151	**MS1153**	T7
E10STLPL2	.625	.770	.406	10.000	.218	0.0	TP..2151	**MS1153**	T7
E12STLPL3	.750	.930	.500	10.000	.281	-2.0	TP..3252	**MS1155**	T15
E16STLPL3	1.000	1.220	.640	12.000	.312	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.
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.



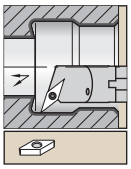


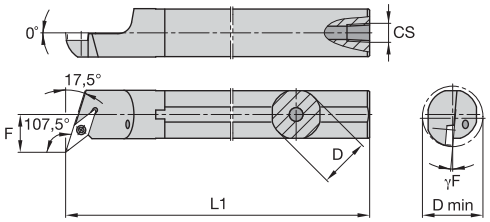
Steel shank with through coolant.
See pages B113–B114 for inserts.

A-SVMB -5°



catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
A08RSVMBR2E	.500	.980	.312	8.000	1/16-27 NPT	VB..221	**MS1153**	T7
A10SSVMBR2E	.625	.980	.406	10.000	1/8-27 NPT	VB..221	**MS1153**	T7
A12SSVMBR3E	.750	1.286	.500	10.000	1/8-27 NPT	VB..332	**MS1155**	T15
A16TSVMBR3E	1.000	1.286	.640	12.000	1/4-18 NPT	VB..332	**MS1155**	T15



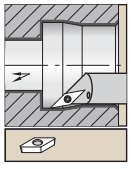


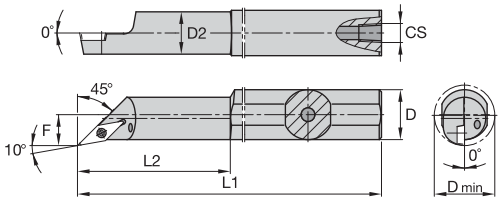
Steel shank with through coolant.
See pages B113–B114 for inserts.

A-SVQB -17.5°



catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A10SSVQBR2	.625	.850	.500	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A12SSVQBR2	.750	.980	.562	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A16TSVQBR3	1.000	1.300	.750	12.00	1/4-18 NPT	VB..332	**MS1155**	T15
left hand								
A10SSVQBL2	.625	.850	.500	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A12SSVQBL2	.750	.980	.562	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A16TSVQBL3	1.000	1.300	.750	12.00	1/4-18 NPT	VB..332	**MS1155**	T15

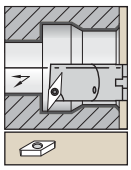




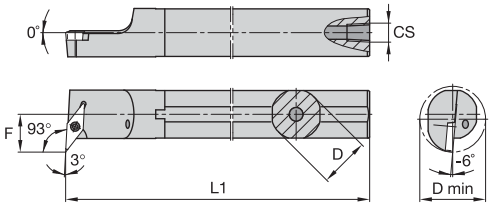
Necked steel shank with through coolant.
See pages B113–B114 for inserts.

A-SVSP -10°

catalog number	D	D min	D2	F	L1	L2	CS	gage insert	insert screw	hex (inch)
A2732SVSPRW4	2.000	2.200	1.688	1.080	14.00	5.31	1/4-18 NPT	VP..443K	**S411**	5/32



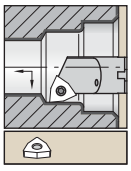
Steel shank with through coolant.
See pages B113–B114 for inserts.



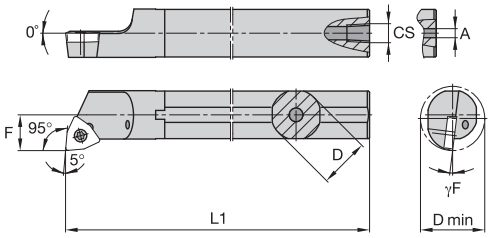
A-SVUB -3°



catalog number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand								
A12SSVUBR2	.750	.980	.562	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A16TSVUBR3	1.000	1.300	.750	12.00	1/4-18 NPT	VB..332	**MS1155**	T15
left hand								
A12SSVUBL2	.750	.980	.562	10.00	1/8-27 NPT	VB..221	**MS1153**	T7
A16TSVUBL3	1.000	1.300	.750	12.00	1/4-18 NPT	VB..332	**MS1155**	T15



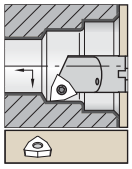
Steel shank with through coolant.
See pages B114–B115 for inserts.



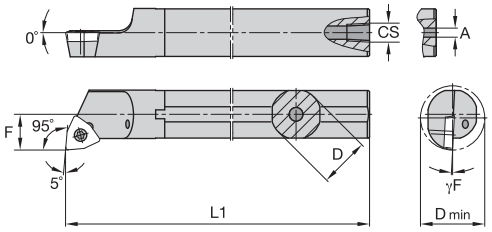
A-SWLC -5°



catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06SWLCR2	.375	.480	.250	6.000	.130	–	-8.0	WC..2151	MS1939	T7
A08SWLCR2	.500	.600	.312	8.000	–	1/16-27 NPT	-6.0	WC..2151	MS1153	T7
A10SWLCR3	.625	.770	.406	10.000	–	1/8-27 NPT	-7.0	WC..3252	MS1155	T15
A12SWLCR3	.750	.930	.500	10.000	–	1/8-27 NPT	-5.0	WC..3252	MS1155	T15
left hand										
A06SWLCL2	.375	.480	.250	6.000	.130	–	-8.0	WC..2151	MS1939	T7
A08SWLCL2	.500	.600	.312	8.000	–	1/16-27 NPT	-6.0	WC..2151	MS1153	T7

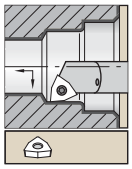


Steel shank with through coolant.
See page B115 for inserts.

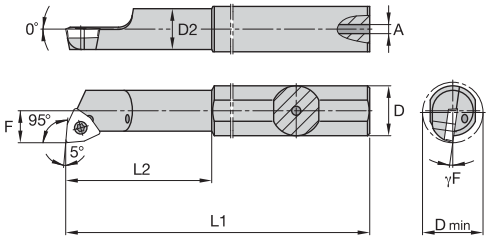


A-SWLP -5°

catalog number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand										
A06SWLPR2	.375	.480	.250	6.00	.125	—	-7.0	WP..2151	**MS1939**	T7
A08SWLPR2	.500	.600	.312	8.00	—	1/16-27 NPT	-2.0	WP..2151	**MS1153**	T7
A10SWLPR3	.625	.770	.406	10.00	—	1/8-27 NPT	-3.0	WP..3252	**MS1155**	T15
A12SWLPR3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	WP..3252	**MS1155**	T15
A16SWLPR3	1.000	1.200	.640	12.00	—	1/4-18 NPT	0.0	WP..3252	**MS1155**	T15
left hand										
A06SWLPL2	.375	.480	.250	6.00	.125	—	-7.0	WP..2151	**MS1939**	T7
A08SWLPL2	.500	.600	.312	8.00	—	1/16-27 NPT	-2.0	WP..2151	**MS1153**	T7
A10SWLPL3	.625	.770	.406	10.00	—	1/8-27 NPT	-3.0	WP..3252	**MS1155**	T15
A12SWLPL3	.750	.930	.500	10.00	—	1/8-27 NPT	-2.0	WP..3252	**MS1155**	T15

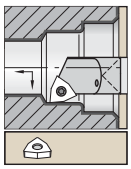


Necked steel shank with through coolant.
See page B115 for inserts.

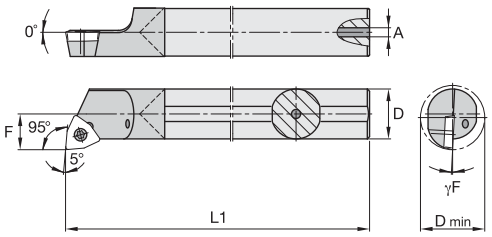


A-SWLP -5°

catalog number	D	D min	D2	F	L1	L2	A	γF°	gage insert	insert screw	Torx
right hand											
A0306SWLPR15	.375	.260	.187	.126	3.50	1.00	.078	-10.0	WP..15121	**MS1438**	T5
A0406SWLPR15	.375	.321	.234	.156	4.00	1.25	.078	-8.0	WP..15121	**MS1438**	T5
A0506SWLPR15	.375	.415	.299	.219	5.00	1.63	.094	-4.0	WP..15121	**MS1438**	T5
left hand											
A0306SWLPL15	.375	.260	.187	.126	3.50	1.00	.078	-10.0	WP..15121	**MS1438**	T5

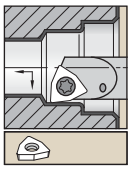


Carbide shank with through coolant.
See page B115 for inserts.

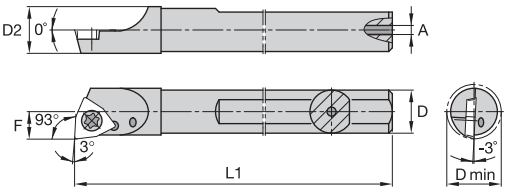


E-SWLP -5°

catalog number	D	D min	F	L1	A	γF°	gage insert	insert screw	Torx
right hand									
E03SWLPR15	.188	.260	.260	4.000	.040	-10.0	WP..15121	**MS1438**	T5
E04SWLPR15	.250	.321	.156	4.015	.047	-8.0	WP..15121	**MS1438**	T5
E05SWLPR15	.313	.415	.219	5.000	.093	-4.0	WP..15121	**MS1438**	T5
E06SWLPR2	.375	.480	.250	6.000	.125	-4.0	WP..2151	**MS1153**	T7
E08SWLPR2	.500	.600	.312	8.000	.187	-2.0	WP..2151	**MS1153**	T7
E10SWLPR3	.625	.770	.406	10.000	.218	-3.0	WP..3252	**MS1155**	T15
E12SWLPR3	.750	.930	.500	10.000	.281	-2.0	WP..3252	**MS1155**	T15
E16SWLPR3	1.000	1.200	.640	12.000	.312	0.0	WP..3252	**MS1155**	T15
left hand									
E03SWLPL15	.188	.260	.126	4.000	.040	-10.0	WP..15121	**MS1438**	T5
E04SWLPL15	.250	.321	.156	4.000	.047	-8.0	WP..15121	**MS1438**	T5
E05SWLPL15	.313	.415	.219	5.000	.093	-4.0	WP..15121	**MS1438**	T5
E06SWLPL2	.375	.480	.250	6.000	.125	-4.0	WP..2151	**MS1153**	T7
E08SWLPL2	.500	.600	.312	8.000	.187	-2.0	WP..2151	**MS1153**	T7
E10SWLPL3	.625	.770	.406	10.000	.218	-3.0	WP..3252	**MS1155**	T15
E12SWLPL3	.750	.930	.500	10.000	.281	-2.0	WP..3252	**MS1155**	T15
E16SWLPL3	1.000	1.200	.640	12.000	.312	0.0	WP..3252	**MS1155**	T15

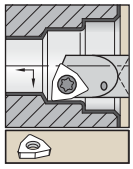


Steel shank with through coolant.
See page B115 for inserts.

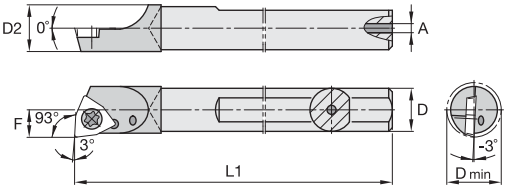


A-SWUP -3°

catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
A04HSWUPR15	.250	.285	.260	.143	4.00	.040	WP..1511	**CT11**	T6
A05HSWUPR15	.312	.347	.322	.174	4.00	.040	WP..1511	**CT15**	T6

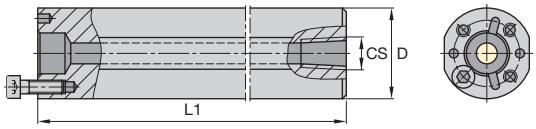


Carbide shank with through coolant.
See page B115 for inserts.



E-SWUP -3°

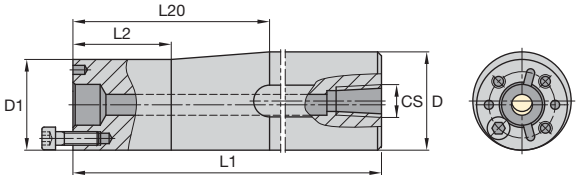
catalog number	D	D min	D2	F	L1	A	gage insert	insert screw	Torx
right hand									
E03MSWUPR15	.187	.260	.225	.126	6.00	.040	WP..15105	**CT15**	T6
E04MSWUPR15	.250	.285	—	.143	6.00	.047	WP..S30104	**CT11**	T6
E05MSWUPR15	.312	.347	.322	.174	6.00	.093	WP..15105	**CT15**	T6
E06MSWUPR2	.375	.415	.385	.211	6.00	.125	WP..21505	**MS1153**	T7
E08RSWUPR2	.500	.540	.510	.273	8.00	.500	WP..21505	**MS1153**	T7



Steel shank with through coolant.
Max 4:1 overhang ratio.

S-4400W

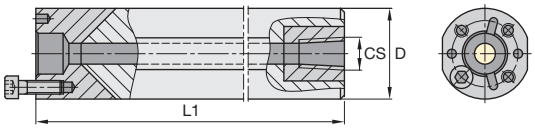
catalog number	D	L1	CS	screw 3 required	screw	hex (inch)
S4416W	1.000	9.00	1/4-18NPT	**S319PKG**	**S322**	9/64
S4420W	1.250	9.00	1/4-18NPT	**S327**	**S330**	5/32
S4424W	1.500	10.00	1/4-18NPT	**S327**	**S330**	5/32
S4428W	1.750	12.00	1/4-18NPT	**S337**	**S340**	3/16
S4432W	2.000	13.00	1/4-18NPT	**S337**	**S340**	3/16
S4440W	2.500	17.00	1/4-18 NPT	**S350**	**S353**	1/4



Steel shank with through coolant.
Max 4:1 overhang ratio.

S-4400W48

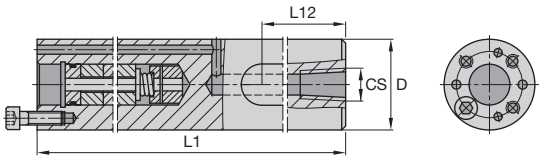
catalog number	D	L1	CS	L2	L20	D1	screw 3 required	screw	hex (inch)
S4440W48	3.000	18.00	3/8-18NPT	3.00	6.00	2.50	**S350**	**S353**	1/4



Carbide shank with through coolant.
Max 6:1 overhang ratio.

C-11800W

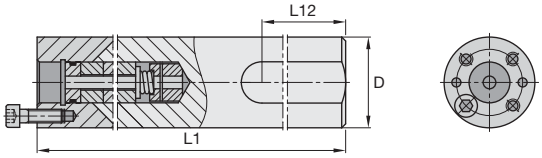
catalog number	D	L1	CS	screw 3 required	screw	hex (inch)
C11816W	1.000	11.00	1/4-18NPT	**S319PKG**	**S322**	9/64
C11820W	1.250	11.00	1/4-18NPT	**S412**	**S415**	5/32



Steel shank DeVibrator with through coolant.
Max 6:1 overhang ratio.

D-5400W

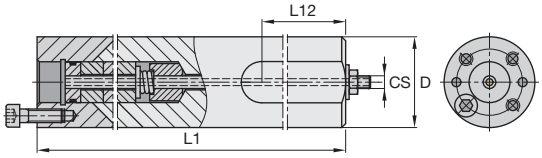
catalog number	D	L1	CS	L12	L1 min	screw 3 required	screw	hex (inch)
D5420W	1.250	10.00	3/8-18NPT	7.75	7.00	**S327**	**S330**	5/32
D5424W	1.500	12.00	3/8-18NPT	9.25	8.00	**S327**	**S330**	5/32
D5428W	1.750	14.00	3/8-18NPT	10.12	9.00	**S337**	**S340**	3/16
D5432W	2.000	16.00	3/8-18NPT	12.75	10.00	**S337**	**S340**	3/16
D5440W	2.500	20.00	3/8-18NPT	14.87	12.00	**S350**	**S353**	1/4



Carbide shank DeVibrator with through coolant.
Max 8:1 overhang ratio.

C-6400

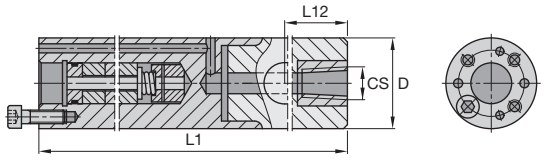
catalog number	D	L1	L12	L1 min	screw 3 required	screw	hex (inch)
C6420	1.250	11.00	8.75	7.00	**S412**	**S415**	5/32



Carbide shank DeVibrator with through coolant.
Max 8:1 overhang ratio.

C-6400W

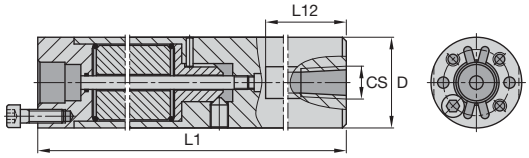
catalog number	D	L1	CS	L12	L1 min	screw 3 required	screw	hex (inch)
C6420W	1.250	11.00	1/4-28UNF	8.75	7.00	**S412**	**S415**	5/32
C6424W	1.500	14.00	1/4-28UNF	11.25	8.00	**S412**	**S415**	5/32
C6428W	1.750	16.00	3/8-24UNF	11.38	9.00	**S422**	**S425**	3/16
C6432W	2.000	19.00	3/8-24UNF	15.75	10.00	**S422**	**S425**	3/16
C6440W	2.500	24.00	3/8-24UNF	18.00	12.00	**S432**	**S435**	1/4



Composite shank DeVibrator with through coolant.
Max 10:1 overhang ratio.

C-11900W

catalog number	D	L1	CS	L12	screw 3 required	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
C11940W	2.500	25.00	3/8-18NPT	11.75	**S350**	**S353**	1/4

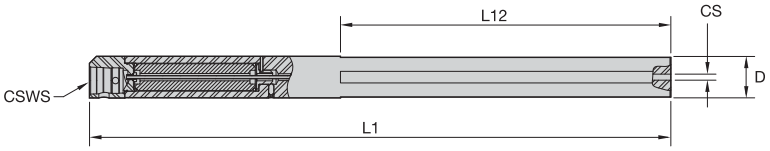


Tunable steel shank with through coolant.

D...TTB • Inch

catalog number	D	L1	CS	L12	L1 min	screw 3 required	screw	hex (inch)
D16TTB16	1.000	15.000	1/4-18NPT	8.000	9.086	**S316**	**S321**	9/64
D20TTB18	1.250	16.125	1/4-18NPT	10.000	9.590	**S325**	**S329**	5/32
D24TTB21	1.500	19.375	1/4-18NPT	12.000	11.038	**S327**	**S330**	5/32
D28TTB25	1.750	23.375	1/4-18NPT	15.750	12.350	**S337**	**S340**	3/16
D32TTB28	2.000	26.375	1/4-18NPT	18.500	12.266	**S337**	**S340**	3/16
D40TTB35	2.500	33.375	1/4-18NPT	24.750	14.880	**S350**	**S353**	1/4
D48TTB42	3.000	40.370	1/4-18NPT	24.000	20.000	**S350**	**S353**	1/4
D64TTB56	4.000	54.480	3/8-18NPT	20.000	25.760	**S350**	**S353**	1/4

NOTE: Order number 1309256 and order number 1909159 use 2.5" diameter heads.

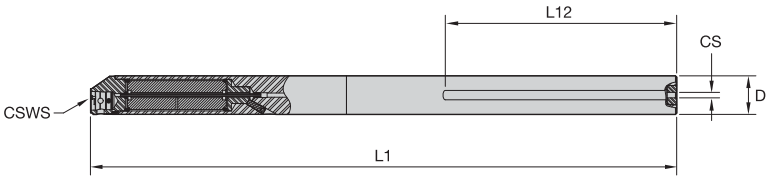


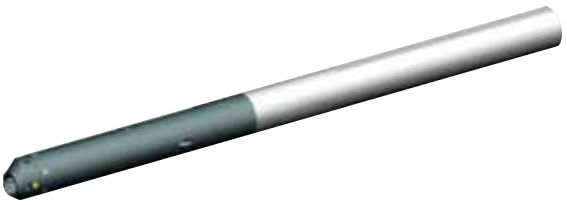
Tunable steel shank with through coolant and front end KM™ clamping unit.

KM QUICK CHANGE

D...TTB-KM • Inch

catalog number	D	L1	CS	L12	CSWS system size	L1 min
D28TTB26KM40	1.750	24.440	1/4 - 18 NPT	15.750	KM40	13.500
D32TTB29KM40	2.000	27.440	1/4 - 18 NPT	18.500	KM40	13.380
D40TTB36KM40	2.500	34.450	1/4 - 18 NPT	24.750	KM40	16.000
D48TTB45KM63	3.000	42.230	1/4 - 18 NPT	24.000	KM63	21.700
D64TTB58KM63	4.000	56.240	3/8 - 18 NPT	20.000	KM63	27.620





Carbide tunable boring bar with KM™ Quick Change connection.

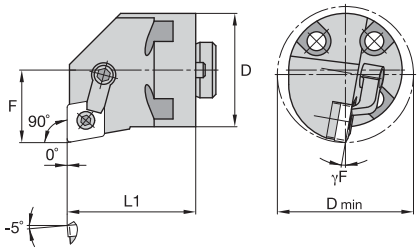
KM QUICK CHANGE

G-KM-TTB • Inch

order number	catalog number	D	L1	CS	L12	CSWS system size
3954294	**G32TTB41KM40**	2.00	39.45	3/8 - 18 NPT	12.00	KM40
3954295	**G40TTB51KM40**	2.50	49.45	3/8 - 18 NPT	15.00	KM40
3954296	**G48TTB63KM63**	3.00	58.56	3/8 - 18 NPT	18.00	KM63
3954297	**G64TTB83KM63**	4.00	76.56	3/8 - 18 NPT	24.00	KM63



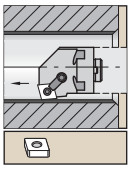
With through coolant.
See pages B40–B49 for inserts.



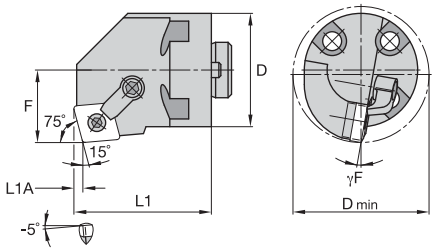
H-MCFN 0°



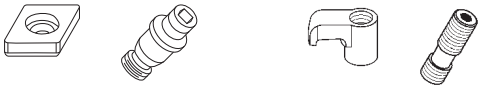
catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H20MCFNR4	1.250	.765	1.625	1.470	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCFNR4	1.500	.890	1.625	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCFNR5	2.000	1.281	1.625	2.400	-10.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCFNR6	2.500	1.531	1.625	3.030	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand												
H24MCFNL4	1.500	.890	1.625	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8



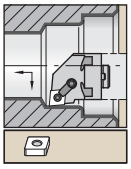
With through coolant.
See pages B40–B49 for inserts.



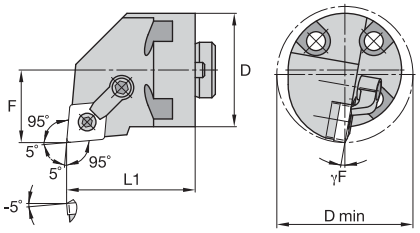
H-MCKN 15°



catalog number	D	F	L1	L1A	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
H24MCKNR4	1.500	.890	1.625	.120	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKNR4	2.000	1.281	1.625	.120	2.400	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKNR5	2.000	1.281	1.625	.149	2.400	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
H40MCKNR5	2.500	1.531	1.625	.149	3.030	-10.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCKNR6	2.500	1.531	1.625	.182	3.030	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand													
H24MCKNL4	1.500	.890	1.625	.120	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKNL4	2.000	1.281	1.625	.120	2.400	-10.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCKNL5	2.000	1.281	1.625	.149	2.400	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK21**	**STC20**	1/8
H40MCKNL5	2.500	1.531	1.625	.149	3.030	-10.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32



With through coolant.
See pages B40–B49 for inserts.

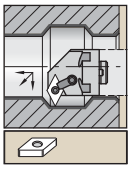


H-MCLN -5°

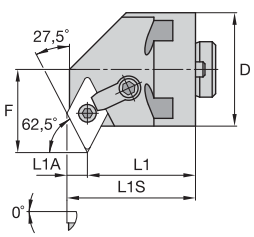





catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H16MCLNR3	1.000	.640	1.625	1.200	-10.0	CN..322	—	**KL33**	5/64	**CK6**	**STC5**	3/32
H16MCLNR4	1.000	.640	1.625	1.200	-14.0	CN..432	—	**KL44**	3/32	**CK7**	**STC9**	3/32
H20MCLNR4	1.250	.765	1.625	1.470	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLNR4	1.500	.890	1.625	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MCLNR4	1.750	1.015	1.625	2.010	-10.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCLNR4	2.000	1.281	1.625	2.400	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H40MCLNR4	2.500	1.531	1.625	3.030	-8.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLNR5	1.500	.890	1.625	1.760	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLNR5	2.000	1.281	1.625	2.400	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCLNR5	2.500	1.531	1.625	3.030	-8.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLNR6	2.000	1.281	1.625	2.400	-12.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H36MCLNR6	2.250	1.406	1.625	2.650	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MCLNR6	2.500	1.531	1.625	3.030	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand												
H16MCLNL3	1.000	.640	1.625	1.200	-10.0	CN..322	—	**KL33**	5/64	**CK6**	**STC5**	3/32
H16MCLNL4	1.000	.640	1.625	1.200	-14.0	CN..432	—	**KL44**	3/32	**CK7**	**STC9**	3/32
H20MCLNL4	1.250	.765	1.625	1.470	-14.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLNL4	1.500	.890	1.625	1.760	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MCLNL4	1.750	1.015	1.625	2.010	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MCLNL4	2.000	1.281	1.625	2.400	-12.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H40MCLNL4	2.500	1.531	1.625	3.030	-8.0	CN..432	**ICSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MCLNL5	1.500	.890	1.625	1.760	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLNL5	2.000	1.281	1.625	2.400	-12.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H40MCLNL5	2.500	1.531	1.625	3.030	-8.0	CN..543	**ICSN533**	**KL58**	1/8	**CK12**	**STC4**	5/32
H32MCLNL6	2.000	1.281	1.625	2.400	-12.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H36MCLNL6	2.250	1.406	1.625	2.650	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MCLNL6	2.500	1.531	1.625	3.030	-10.0	CN..643	**ICSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



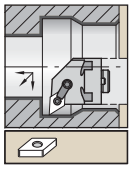
With through coolant.
See pages B50–B57 for inserts.



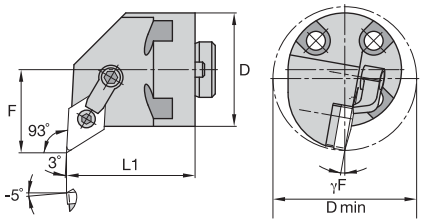
H-MDPN 27.5°



catalog number	D	F	L1	L1A	L1S	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
H20MDPNR4	1.250	1.000	1.367	.258	1.625	1.705	-13.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDPNR4	1.500	1.125	1.365	.260	1.625	2.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
left hand														
H20MDPNL4	1.250	1.000	1.367	.258	1.625	1.705	-13.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDPNL4	1.500	1.125	1.365	.260	1.625	2.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8



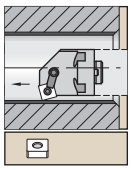
With through coolant.
See pages B50–B57 for inserts.



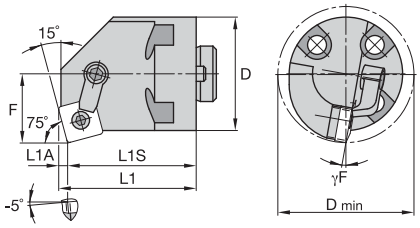
H-MDUN -3°



catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H16MDUNR3	1.000	.750	1.625	1.300	-11.0	DN..332	–	**KL33L**	5/64	**CK7**	**STC5**	3/32
H24MDUNR3	1.500	1.125	1.625	2.000	-10.0	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H32MDUNR3	2.000	1.325	1.625	2.500	-8.0	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H20MDUNR4	1.250	1.000	1.625	1.705	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDUNR4	1.500	1.125	1.625	2.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H28MDUNR4	1.750	1.250	1.625	2.250	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H32MDUNR4	2.000	1.375	1.625	2.500	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H36MDUNR4	2.250	1.500	1.625	2.870	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H40MDUNR4	2.500	1.750	1.625	3.250	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
left hand												
H16MDUNL3	1.000	.750	1.625	1.300	-11.0	DN..332	–	**KL33L**	5/64	**CK7**	**STC5**	3/32
H24MDUNL3	1.500	1.125	1.625	2.000	-10.0	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H32MDUNL3	2.000	1.325	1.625	2.500	-8.0	DN..332	**IDSN322**	**KL34L**	5/64	**CK7**	**STC5**	3/32
H20MDUNL4	1.250	1.000	1.625	1.705	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK22**	**STC20**	1/8
H24MDUNL4	1.500	1.125	1.625	2.000	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H28MDUNL4	1.750	1.250	1.625	2.250	-10.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H32MDUNL4	2.000	1.375	1.625	2.500	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H36MDUNL4	2.250	1.500	1.625	2.870	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32
H40MDUNL4	2.500	1.750	1.625	3.250	-8.0	DN..432	**IDSN443**	**KL46L**	3/32	**CK12**	**STC4**	5/32



With through coolant.
See pages B59–B65 for inserts.

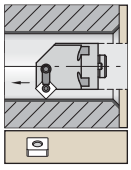


H-MSKN 15°

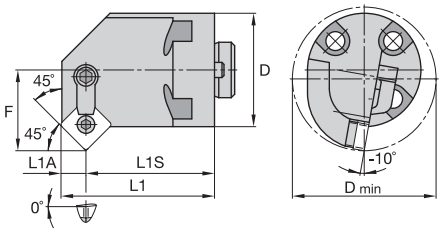





catalog number	D	F	L1	L1A	L1S	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
H24MSKNR4	1.500	.890	1.625	.119	1.744	1.760	-10.0	SN..432	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H28MSKNR4	1.750	1.015	1.625	.119	1.744	2.010	-10.0	SN..432	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H32MSKNR4	2.000	1.281	1.625	.119	1.744	2.400	-12.0	SN..432	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H40MSKNR6	2.500	1.531	1.625	.179	1.804	3.030	-10.0	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand														
H20MSKNL4	1.250	.765	1.625	.118	1.743	1.470	-14.0	SN..432	**–**	**KL44**	3/32	**CK21**	**STC20**	1/8
H24MSKNL4	1.500	.890	1.625	.119	1.744	1.760	-10.0	SN..432	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H40MSKNL6	2.500	1.531	1.625	.179	1.804	3.030	-10.0	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



With through coolant.
See pages B59–B65 for inserts.

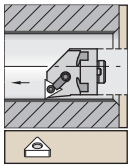


H-MSSN 45°

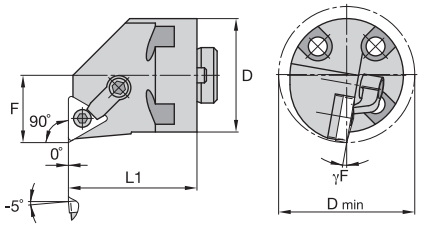





catalog number	D	F	L1	L1A	L1S	D min	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand													
H24MSSNR4	1.500	1.125	1.625	.338	1.287	2.000	SN..432	**ISSN433**	**KL46**	3/32	**CK21**	**STC20**	1/8
H32MSSNR6	2.000	1.375	1.625	.507	1.118	2.500	SN..633	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
H40MSSNR6	2.500	1.750	1.625	.507	1.118	3.250	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32
left hand													
H40MSSNL6	2.500	1.750	1.625	.507	1.118	3.250	SN..643	**ISSN633**	**KL68**	9/64	**CK12**	**STC4**	5/32



With through coolant.
See pages B66–B74 for inserts.

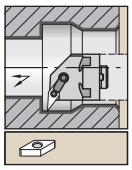


H-MTFN 0°

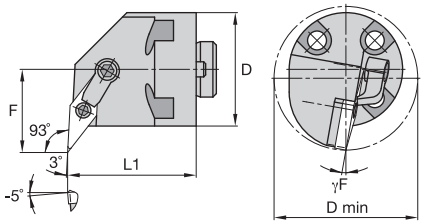





catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H16MTFNR3	1.000	.640	1.625	1.200	-12.0	TN..332	–	KL33L	5/64	CK7	STC9	3/32
H20MTFNR3	1.250	.765	1.625	1.470	-12.0	TN..332	–	KL33L	5/64	CK7	STC9	3/32
H24MTFNR3	1.500	.890	1.625	1.760	-10.0	TN..332	ITSN323	KL34L	5/64	CK7	STC9	3/32
H28MTFNR3	1.750	1.015	1.625	2.010	-10.0	TN..332	ITSN323	KL34L	5/64	CK7	STC9	3/32
H32MTFNR4	2.000	1.281	1.625	2.400	-8.0	TN..432	ITSN433	KL46	3/32	CK9	STC4	5/32
H40MTFNR4	2.500	1.531	1.625	3.030	-6.0	TN..432	ITSN433	KL46	3/32	CK9	STC4	5/32
left hand												
H16MTFNL3	1.000	.640	1.625	1.200	-12.0	TN..332	–	KL33L	5/64	CK7	STC9	3/32
H24MTFNL3	1.500	.890	1.625	1.760	-10.0	TN..332	ITSN323	KL34L	5/64	CK7	STC9	3/32
H28MTFNL3	1.750	1.015	1.625	2.010	-10.0	TN..332	ITSN323	KL34L	5/64	CK7	STC9	3/32
H32MTFNL4	2.000	1.281	1.625	2.400	-8.0	TN..432	ITSN433	KL46	3/32	CK9	STC4	5/32
H40MTFNL4	2.500	1.531	1.625	3.030	-6.0	TN..432	ITSN433	KL46	3/32	CK9	STC4	5/32



With through coolant.
See pages B74–B78 for inserts.

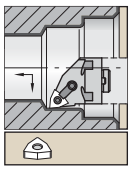


H-MVUN -3°

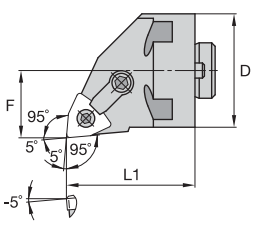





catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H20MVUNR3	1.250	1.000	1.625	1.705	-12.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H24MVUNR3	1.500	1.125	1.625	2.000	-10.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H32MVUNR3	2.000	1.325	1.625	2.650	-10.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H40MVUNR3	2.500	1.750	1.625	3.250	-10.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H32MVUNR4	2.000	1.375	1.625	2.500	-10.0	VN..432	IVSN433	KL46	3/32	CK43	STC4	5/32
H40MVUNR4	2.500	1.750	1.625	3.250	-10.0	VN..432	IVSN433	KL46	3/32	CK43	STC4	5/32
left hand												
H20MVUNL3	1.250	1.000	1.625	1.705	-12.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H24MVUNL3	1.500	1.125	1.625	2.000	-12.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H32MVUNL3	2.000	1.325	1.625	2.650	-10.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H40MVUNL3	2.500	1.750	1.625	3.250	-10.0	VN..332	IVSN322	KL34L	5/64	CK22	STC20	1/8
H32MVUNL4	2.000	1.375	1.625	2.500	-10.0	VN..432	IVSN433	KL46	3/32	CK43	STC4	5/32
H40MVUNL4	2.500	1.750	1.625	3.250	-10.0	VN..432	IVSN433	KL46	3/32	CK43	STC4	5/32



With through coolant.
See pages B79–B83 for inserts.



H-MWLN -5°






catalog number	D	F	L1	D min	γF°	gage insert	shim	lock pin	hex (inch)	clamp	clamp screw	hex (inch)
right hand												
H16MWLNR3	1.000	.640	1.625	1.200	-12.0	WN..332	–	**KL33L**	5/64	**CK6**	**STC5**	3/32
H20MWLNR4	1.250	.765	1.625	1.470	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MWLNR4	1.500	.890	1.625	1.760	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MWLNR4	1.750	1.015	1.625	2.010	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MWLNR4	2.000	1.281	1.625	2.400	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
left hand												
H16MWLNL3	1.000	.640	1.625	1.200	-12.0	WN..332	–	**KL33L**	5/64	**CK6**	**STC5**	3/32
H20MWLNL4	1.250	.765	1.625	1.470	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H24MWLNL4	1.500	.890	1.625	1.760	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H28MWLNL4	1.750	1.015	1.625	2.010	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8
H32MWLNL4	2.000	1.281	1.625	2.400	-14.0	WN..432	**IWSN433**	**KL46**	3/32	**CK20**	**STC20**	1/8

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

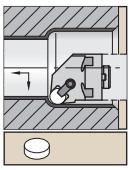
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.



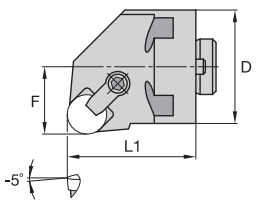
By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**



With through coolant.
See page B128 for inserts.

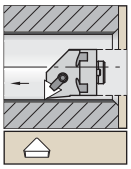


H-CRGN

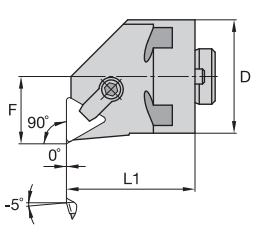





catalog number	D	F	L1	D min	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand											
H24CRGNR4	1.500	.890	1.625	1.760	RN.42	**SM437**	**SL344**	–	**CK7LP**	**STC9**	3/32
H32CRGNR4	2.000	1.281	1.625	2.400	RN.42	**SM437**	**SL344**	–	**CK7LP**	**STC9**	3/32



With through coolant.
See pages B86–B87 and B130 for inserts.

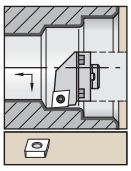


H-CTFP 0°

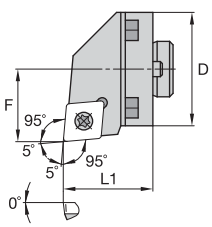





catalog number	D	F	L1	D min	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand											
H20CTFPR3W	1.250	.765	1.625	1.470	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H24CTFPR3W	1.500	.890	1.625	1.760	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H32CTFPR4W	2.000	1.281	1.625	2.400	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32
H40CTFPR4W	2.500	1.531	1.625	3.030	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32
left hand											
H20CTFPL3W	1.250	.765	1.625	1.470	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H24CTFPL3W	1.500	.890	1.625	1.760	TP.322	**SM41**	**S111**	1/16	**CK10**	**STC8**	5/32
H32CTFPL4W	2.000	1.281	1.625	2.400	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32
H40CTFPL4W	2.500	1.531	1.625	3.030	TP.432	**SM37**	**S125**	3/32	**CK10**	**STC4**	5/32

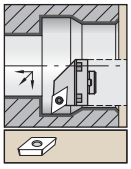


With through coolant.
See pages B88–B91 for inserts.

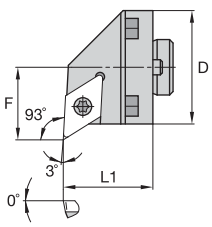


H-SCLC -5°

catalog number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H16SCLCR3	1.000	.640	.790	1.2000	CC..3252	**MS1155**	T15
left hand							
H16SCLCL3	1.000	.640	.790	1.2000	CC..3252	**MS1155**	T15

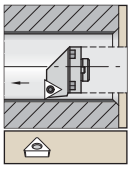


With through coolant.
See pages B98–B100 for inserts.

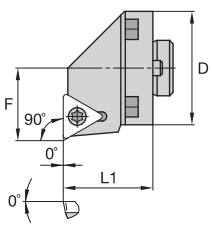


H-SDUP -3°

catalog number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H16SDUPR3	1.000	.640	.790	1.200	DP..3252	**MS1155**	T15
left hand							
H16SDUPL3	1.000	.640	.790	1.200	DP..3252	**MS1155**	T15



With through coolant.
See pages B109–B112 for inserts.



H-STFP 0°

catalog number	D	F	L1	D min	gage insert	insert screw	Torx
right hand							
H16STFPR2	1.000	.640	.790	1.200	TP..2151	**MS1153**	T7
left hand							
H16STFPL2	1.000	.640	.790	1.200	TP..2151	**MS1153**	T7



Cartridges

Primary Application

Modern machining operations demand high-quality, high-performance toolholders that provide straightforward design and application versatility.

Standard Kennametal cartridges are ideal for turning tools with one, or several, cutting edges. A wide range of cartridge sizes and styles provide numerous combinations and application possibilities.

Features and Benefits

Kenloc™ Style (M-Clamping)

- Used for Kenloc inserts.
- Lock pin and top clamp provide rigid clamping.
- Wide variety of insert styles may be used.
- Tools may be used with or without top clamp.
- Optional hardware available for thicker inserts.
- Extreme sturdy clamping system, specially designed for interrupted cuts.
- Tool is protected by a carbide shim.

Kenlever™ Style (P-Clamping*)

- Proven superior system for holding ceramic inserts rigidly in turning and profiling operations.
- Can be used on Kendex or Kenloc inserts using optional hardware.
- Lever-type clamping system for negative indexable inserts with hole to DIN 4988 and positive round inserts more than 20mm in diameter.
- Inserts with one- and two-side chip control geometries have positive rakes from 6–18°.
- Advantages include fast insert changes and no interference with chip flow.

*NOTE: P-style available in metric sizes only.



Kendex™ Style (C-Clamping)

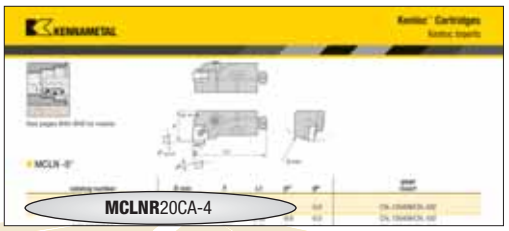
- Suitable for Kendex inserts.
- Chipbreaker option available for ceramic inserts.
- Wide variety of insert styles may be used.
- Top clamping system for negative and positive indexable inserts to DIN 4968.
- Universal clamping system is robust and easy to handle.
- Some height-adjustable clamps enable the use of additional chipbreakers.
- Carbide shim provides additional tool protection.

Screw-On Style (S-Clamping)

- Used for Screw-On inserts.
- Top clamping by screw.
- Screw clamping system for positive indexable inserts with countersunk hole to DIN 4967.
- Compact design using a minimum of spare parts for high reliability and cost efficiency.
- Toolholders with cutting edge heights greater than .625" (16mm) and insert ICs from .375" (9,52mm) are secured by a threaded bushing.
- Carbide shim provides additional tool protection.

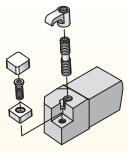
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



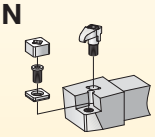
M — Insert Holding Method

C



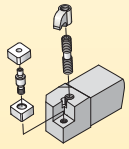
Kendex™

N



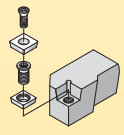
Top Notch™ Profiling

M



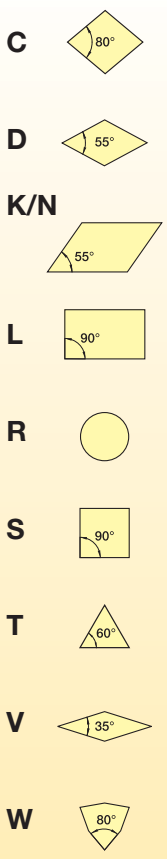
Kenloc™

S

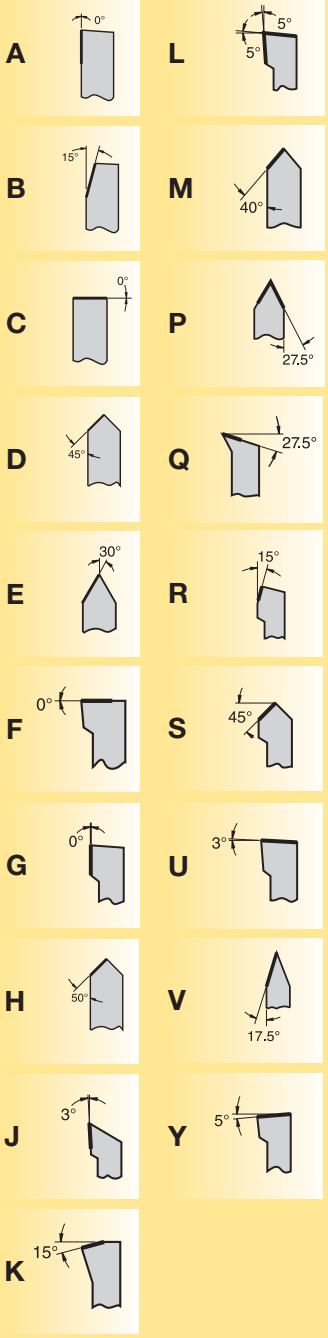


Screw-On

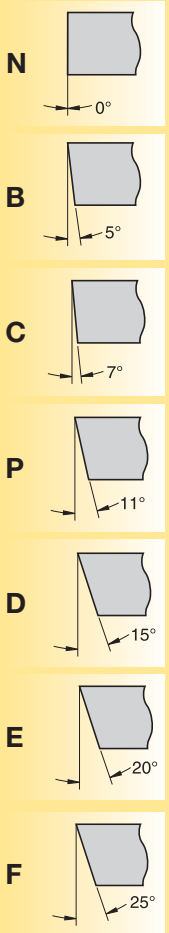
C — Insert Shape



L — Tool Style or Lead Angle

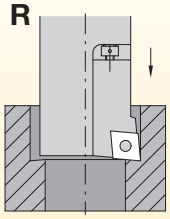


N — Insert Clearance Angle

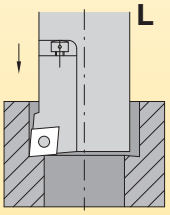


R — Hand of Tool

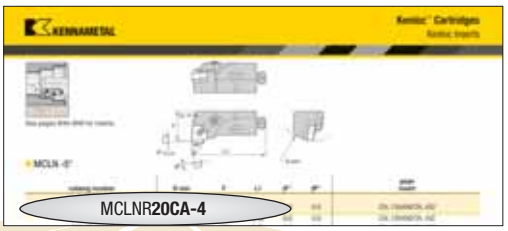
R = Right-hand boring bar



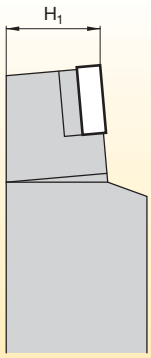
L = Left-hand boring bar



By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



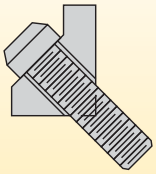
20	C	A	—	4
Cartridge Size	Cartridge Identification	Cartridge Mounting		Insert Size



H_1 =
Cutting edge height of cartridge, in millimeters

C =
Cartridge

A =
Angular acc.
ISO 5611



Inserts IC
Number of 1/8ths of "D"

C

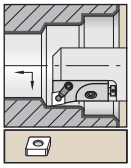

T


D

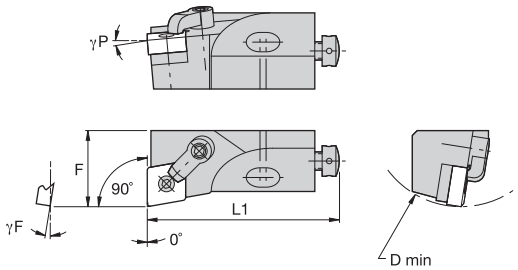

W


S


R

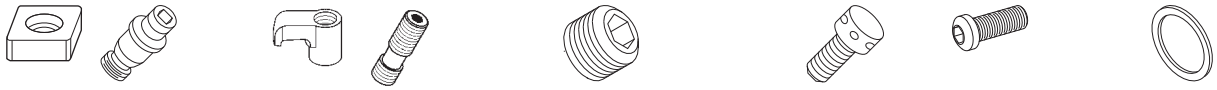
See pages B40–B49 for inserts.



MCFN 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MCFNR10CA3	1.575	.551	1.97	-9.0	-9.0	CN..090308/CN..322
MCFNR12CA4	1.969	.787	2.17	-9.0	-5.0	CN..120408/CN..432
MCFNR16CA4	2.362	.984	2.48	-9.0	-5.0	CN..120408/CN..432
MCFNR20CA4	2.756	.984	2.76	-9.0	-5.0	CN..120408\CN..432
left hand						
MCFNL10CA3	1.575	.551	1.97	-9.0	-9.0	CN..090308/CN..322
MCFNL12CA4	1.969	.787	2.17	-9.0	-5.0	CN..120408/CN..432
MCFNL16CA4	2.362	.984	2.48	-9.0	-5.0	CN..120408/CN..432

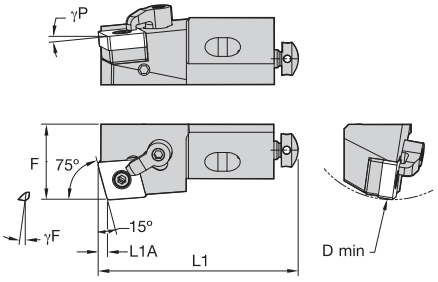
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B40–B49 for inserts.



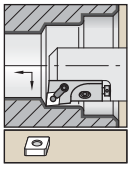
MCKN 15°

catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MCKNR12CA4	1.969	.787	2.17	.12	-9.0	-5.0	CN..120408/CN..432
MCKNR16CA4	2.362	.984	2.48	.12	-9.0	-5.0	CN..120408/CN..432
left hand							
MCKNL12CA4	1.969	.787	2.17	.12	-9.0	-5.0	CN..120408/CN..432
MCKNL16CA4	2.362	.984	2.48	.12	-9.0	-5.0	CN..120408/CN..432

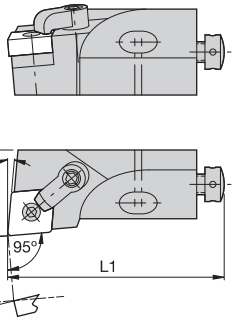
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



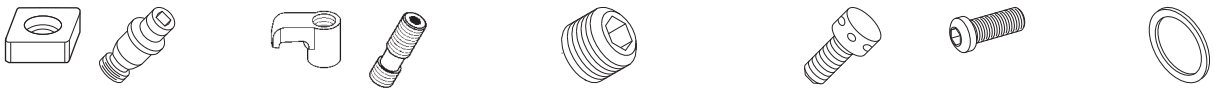
See pages B40–B49 for inserts.



MCLN -5°

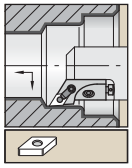
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MCLNR12CA4	1.969	.787	2.17	-9.0	-5.0	CN..120408/CN..432
MCLNR16CA4	2.362	.984	2.48	-9.0	-5.0	CN..120408/CN..432
MCLNR20CA4	2.756	.984	2.76	-9.0	-5.0	CN..120408/CN..432
MCLNR25CA4	3.937	1.260	3.94	-9.0	-5.0	CN..120408/CN..432
MCLNR25CA5	3.937	1.260	3.94	-9.0	-5.0	CN..160612/CN..543
MCLNR25CA6	3.937	1.260	3.94	-9.0	-5.0	CN..190612/CN..643
left hand						
MCLNL12CA4	1.969	.787	2.17	-9.0	-5.0	CN..120408/CN..432
MCLNL16CA4	2.362	.984	2.48	-9.0	-5.0	CN..120408/CN..432
MCLNL20CA4	2.756	.984	2.76	-9.0	-5.0	CN..120408/CN..432
MCLNL25CA4	3.937	1.260	3.94	-9.0	-5.0	CN..120408/CN..432
MCLNL25CA5	3.937	1.260	3.94	-9.0	-5.0	CN..160612/CN..543
MCLNL25CA6	3.937	1.260	3.94	-9.0	-5.0	CN..190612/CN..643

Spare Parts

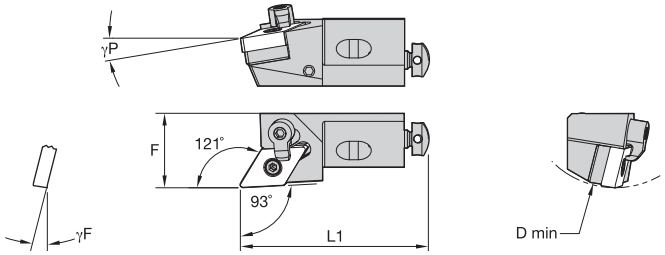


D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	—	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ICSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
3.937	**ICSN432**	**KLM46**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
3.937	**ICSN533**	**KLM58**	3 mm	**CKM41**	**STCM20**	3 mm	**KUAM26**	3 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
3.937	**ICSN633**	**KLM68**	4 mm	**CKM35**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**

NOTE: Select spare parts based off of D min and insert size selected.



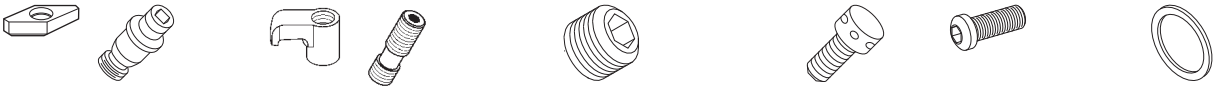
See pages B50–B57 for inserts.



MDJN-3°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MDJNR12CA3	1.969	.787	2.17	-9.0	-9.0	DN..110408/DN..322
MDJNR16CA4	2.362	.984	2.48	-9.0	-9.0	DN..150408/DN..3.532
MDJNR20CA4	2.756	.984	2.76	-8.5	-8.5	DN..150408/DN..3.532
left hand						
MDJNL12CA3	1.969	.787	2.17	-9.0	-9.0	DN..110408/DN..322
MDJNL16CA4	2.362	.984	2.48	-9.0	-9.0	DN..150408/DN..3.532
MDJNL20CA4	2.756	.984	2.76	-8.5	-8.5	DN..150408/DN..3.532

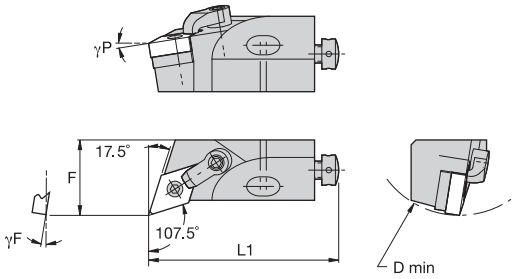
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**IDSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**IDSN432**	**KLM46**	2.5 mm	**CKM41**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



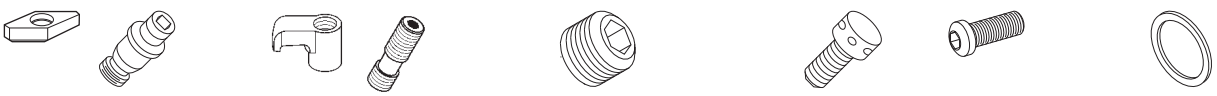
See pages B50–B57 for inserts.



MDQN -17.5°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MDQNR16CA4	2.362	.984	2.48	-9.0	-6.0	DN..150408/DN..3.532
MDQNR20CA4	2.756	.984	2.76	-9.0	-8.0	DN..150408/DN..3.532
left hand						
MDQNL16CA4	2.362	.984	2.48	-9.0	-6.0	DN..150408/DN..3.532
MDQNL20CA4	2.756	.984	2.76	-9.0	-8.0	DN..150408/DN..3.532

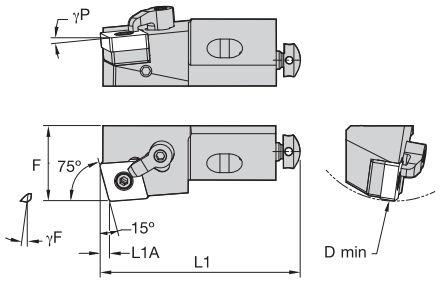
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
2.362	**IDSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**IDSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B59–B65 for inserts.



MSKN 15°

catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MSKNR10CA3	1.575	.551	1.97	.09	-9.0	-5.0	SN..090308/SN..322
MSKNR12CA4	1.969	.787	2.17	.12	-9.0	-5.0	SN..120408/SN..432
MSKNR16CA4	2.362	.984	2.48	.12	-9.0	-5.0	SN..120408/SN..432
MSKNR20CA5	2.756	.984	2.76	.15	-9.0	-5.0	SN..150612/SN..543
MSKNR25CA6	3.937	1.260	3.94	.18	-9.0	-5.0	SN..190612/SN..543
left hand							
MSKNL10CA3	1.575	.551	1.97	.09	-9.0	-5.0	SN..090308/SN..322
MSKNL12CA4	1.969	.787	2.17	.12	-9.0	-5.0	SN..120408/SN..432
MSKNL16CA4	2.362	.984	2.48	.12	-9.0	-5.0	SN..120408/SN..432
MSKNL25CA4	3.937	1.260	3.94	.12	-9.0	-5.0	SN..120408/SN..432
MSKNL20CA5	2.756	.984	2.76	.15	-9.0	-5.0	SN..150612/SN..543

Spare Parts

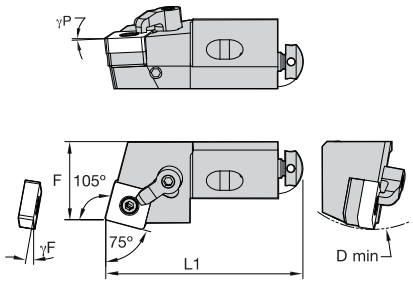


D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
3.937	**ICSN432**	**KLM46**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**
3.937	**ICSN633**	**KLM68**	4 mm	**CKM35**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**

NOTE: Select spare parts based off of D min and insert size selected.



See pages B59–B65 for inserts.



MSRN 15°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MSRNR10CA3	1.575	.551	1.97	-9.0	-5.0	SN..090308/SN..322
MSRNR12CA4	1.969	.787	2.17	-9.0	-5.0	SN..120408/SN..432
MSRNR16CA4	2.362	.984	2.48	-9.0	-5.0	SN..120408/SN..432
MSRNR20CA5	2.756	.984	2.76	-9.0	-5.0	SN..150612/SN..543
left hand						
MSRNL10CA3	1.575	.551	1.97	-9.0	-5.0	SN..090308/SN..322
MSRNL12CA4	1.969	.787	2.17	-9.0	-5.0	SN..120408/SN..432
MSRNL16CA4	2.362	.984	2.48	-9.0	-5.0	SN..120408/SN..432
MSRNL20CA5	2.756	.984	2.76	-9.0	-5.0	SN..150612/SN..543

Spare Parts

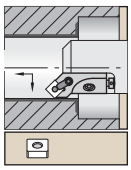




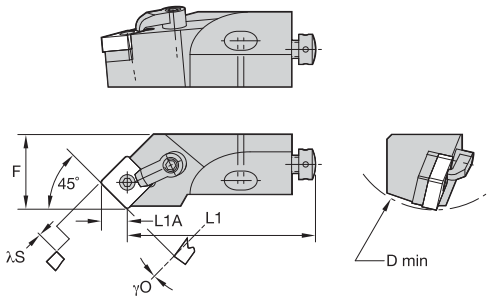





D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B59–B65 for inserts.



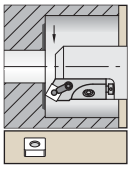
MSSN 45°

catalog number	D min	F	L1	FA	L1A	λS°	γO°	gage insert
MSSNR10CA3	2	.551	1.73	.25	.24	-13.000	0.0	SN..090308/SN..322
MSSNR12CA4	2	.787	1.85	—	.33	-13.000	0.0	SN..120408/SN..432
MSSNR16CA4	2	.984	2.09	.34	.33	-13.000	0.0	SN..120408/SN..432
MSSNR20CA5	3	.984	2.36	.56	.40	-13.000	0.0	SN..150612/SN..543
MSSNL10CA3	2	.551	1.73	.25	.24	-13.000	0.0	SN..090308/SN..322
MSSNL12CA4	2	.787	1.85	—	.33	-13.000	0.0	SN..120408/SN..432
MSSNL16CA4	2	.984	2.09	.34	.33	-13.000	0.0	SN..120408/SN..432
MSSNL20CA5	3	.984	2.36	.56	.40	-13.000	0.0	SN..150612/SN..543

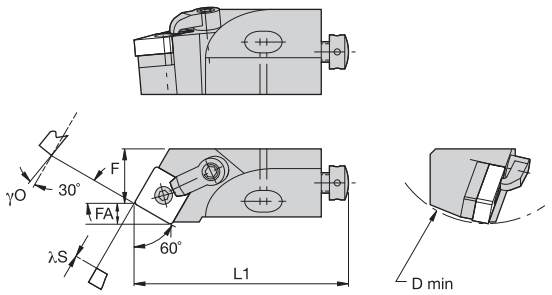
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	—	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	—	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



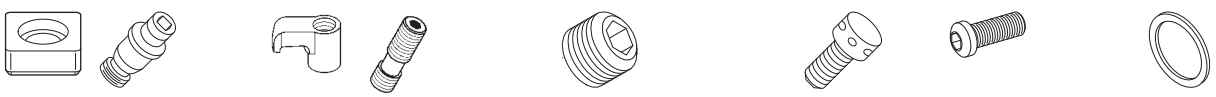
See pages B59–B65 for inserts.



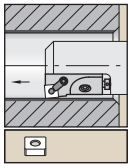
MSTN 30°

catalog number	D min	F	L1	FA	λS°	γO°	gage insert
right hand							
MSTNR10CA3	1.575	.354	1.97	.52	-11.0	0.0	SN..090308/SN..322
MSTNR12CA4	1.969	.512	2.17	.23	-11.0	0.0	SN..120408/SN..432
left hand							
MSTNL10CA3	1.575	.354	1.97	.52	-11.0	0.0	SN..090308/SN..322
MSTNL16CA4	2.362	.591	2.48	.23	-11.0	0.0	SN..120408/SN..432

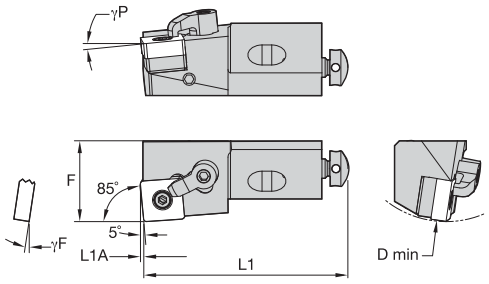
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	—	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	—	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B59–B65 for inserts.



MSYN 5°

catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
MSYNR10CA3	1.575	.551	1.97	.03	-9.0	-5.0	SN..090308/SN..322
MSYNR12CA4	1.969	.787	2.17	.04	-9.0	-5.0	SN..120408/SN..432
MSYNR16CA4	2.362	.984	2.48	.04	-9.0	-5.0	SN..120408/SN..432
MSYNR25CA19	3.937	1.260	3.94	.06	-9.0	-5.0	SN..190612/SN..643
left hand							
MSYNL10CA3	1.575	.551	1.97	.03	-9.0	-5.0	SN..090308/SN..322
MSYNL12CA4	1.969	.787	2.17	.04	-9.0	-5.0	SN..120408/SN..432
MSYNL16CA4	2.362	.984	2.48	.04	-9.0	-5.0	SN..120408/SN..432
MSYNL20CA15	2.756	.984	2.76	.05	-9.0	-5.0	SN..150612/SN..543

Spare Parts



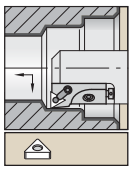




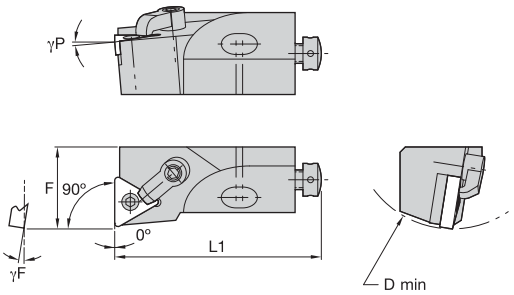



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	**KLM33**	2 mm	**CKM36**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	**KLM43**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.362	**ISSN432**	**KLM46S**	2.5 mm	**CKM36**	**STCM9**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SKSN566K**	**KLM54**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	6 mm	**CSWM 080 050**
3.937	**ISSN633**	**KLM68**	4 mm	**CKM34**	**STCM8**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS-364**	8 mm	**CSWM 100 080**

NOTE: Select spare parts based off of D min and insert size selected.



See pages B66–B74 for inserts.



MTFN 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTFNR12CA3	1.969	.787	2.17	-9.0	-5.0	TN..160408/TN..332
MTFNR16CA3	2.362	.984	2.48	-9.0	-5.0	TN..160408/TN..332
MTFNR20CA4	2.756	.984	2.76	-9.0	-5.0	TN..220408/TN..432
left hand						
MTFNL12CA3	1.969	.787	2.17	-9.0	-5.0	TN..160408/TN..332
MTFNL16CA3	2.362	.984	2.48	-9.0	-5.0	TN..160408/TN..332
MTFNL20CA4	2.756	.984	2.76	-9.0	-5.0	TN..220408/TN..432

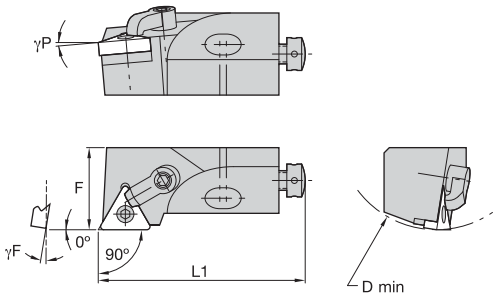
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ITSN433**	**KLM46**	2.5 mm	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B66–B74 for inserts.



MTGN 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTGNR12CA3	1.969	.787	2.17	-9.0	-5.0	TN..160408/TN..332
MTGNR16CA3	2.362	.984	2.48	-9.0	-5.0	TN..160408/TN..332
MTGNR20CA4	2.756	.984	2.76	-9.0	-5.0	TN..220408/TN..432
left hand						
MTGNL12CA3	1.969	.787	2.17	-9.0	-5.0	TN..160408/TN..332
MTGNL16CA3	2.362	.984	2.48	-9.0	-5.0	TN..160408/TN..332
MTGNL20CA4	2.756	.984	2.76	-9.0	-5.0	TN..220408/TN..432

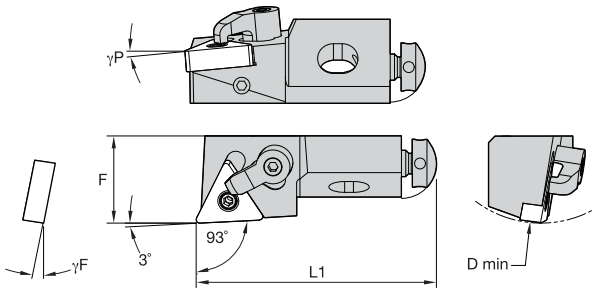
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ITSN433**	**KLM46**	2.5 mm	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B66–B74 for inserts.



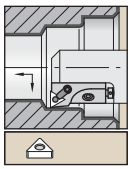
MTJN -3°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTJNR12CA3	1.969	.787	2.17	-9.000	-5.000	TN..160408/TN..332
left hand						
MTJNL12CA3	1.969	.787	2.17	-9.000	-5.000	TN..160408/TN..332

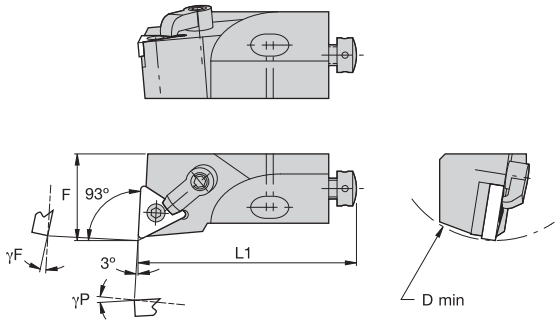
Spare Parts



D min	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



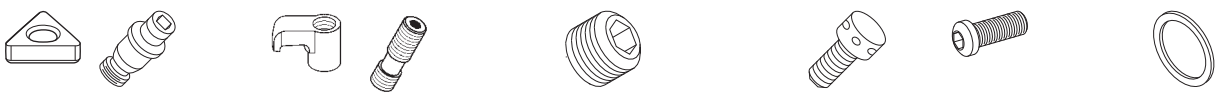
See pages B66–B74 for inserts.



MTUN -3°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MTUNR16CA3	2.362	.984	2.48	-9.000	-5.0	TN..160408/TN..332
MTUNR20CA4	2.756	.984	2.76	-9.000	-5.0	TN..220408/TN..432
left hand						
MTUNL12CA3	1.969	.787	2.17	-9.000	-5.0	TN..160408/TN..332
MTUNL16CA3	2.362	.984	2.48	-9.000	-5.0	TN..160408/TN..332
MTUNL20CA4	2.756	.984	2.76	-9.000	-5.0	TN..220408/TN..432

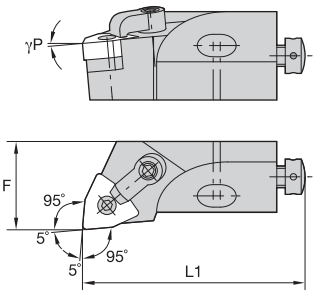
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	—	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**ITSN322**	**KLM34L**	2 mm	**CKM34**	**STCM9**	2 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ITSN433**	**KLM46**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	5 mm	**CSWM 080 050**
2.756	**ITSN433**	**KLM46**	2.5 mm	**CKM35**	**STCM37**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**191.407**	5 mm	**CSWM 080 050**



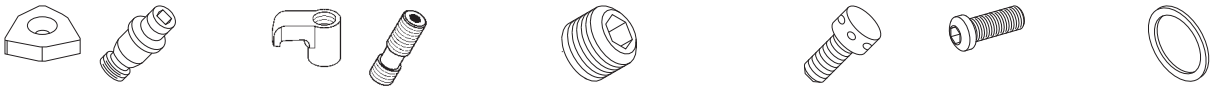
See pages B79–B83 for inserts.



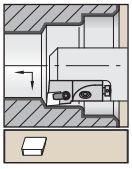
MWLN-5°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
MWLNR12CA3	1.969	.787	2.17	-9.0	-5.0	WN..060408/WN..332
MWLNR16CA3	2.362	.984	2.48	-9.0	-5.0	WN..060408/WN..332
MWLNR20CA3	2.756	.984	2.76	-9.0	-5.0	WN..060408/WN..332
MWLNR25CA4	3.937	1.260	3.94	-9.0	-5.0	WN..080408/WN..432

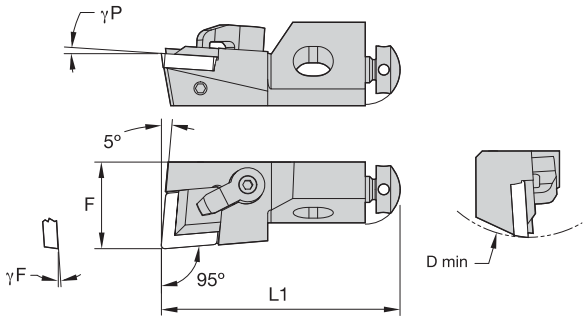
Spare Parts



D min	shim	lock pin	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	–	**KLM33L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**IWSN322**	**KLM34L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**IWSN322**	**KLM34L**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
3.937	**IWSN433**	**KLM46**	2.5 mm	**CKM37**	**STCM40**	2.5 mm	**KUAM25**	2.5 mm	**KUAM32**	**MS364**	8 mm	**CSWM 100 080**



See page B84 for inserts.



CCLP -5°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
CCLPR12CA4	1.969	.787	2.17	3.5	3.5	CP..120308/CP..422
left hand						
CCLPL12CA4	1.969	.787	2.17	3.5	3.5	CP..120308/CP..422

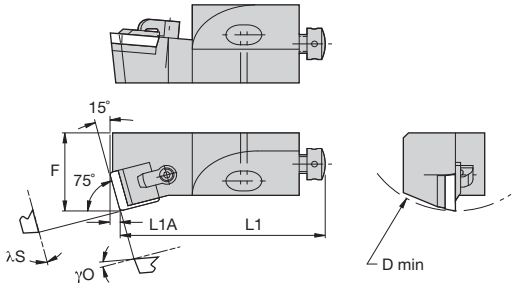
Spare Parts



D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	hex	mounting screw	hex	washer
1.969	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	2 mm	**191.406**	4 mm	**CSWM 060 050**



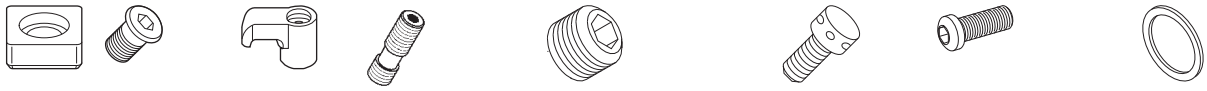
See pages B85–B86 and B129–B130 for inserts.



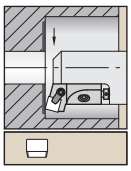
CSKP 15°

catalog number	D min	F	L1	λS°	γO°	gage insert
right hand						
CSKPR10CA3	1.575	.551	1.97	0.0	5.0	SP..090308/SP..322
CSKPR12CA4	1.969	.787	2.17	0.0	5.0	SP..120308/SP..422
CSKPR20CA4	2.756	.984	2.76	0.0	5.0	SP..120308/SP..422
left hand						
CSKPL12CA4	1.969	.787	2.17	0.0	5.0	SP..120308/SP..422
CSKPL20CA4	2.756	.984	2.76	0.0	5.0	SP..120308/SP..422

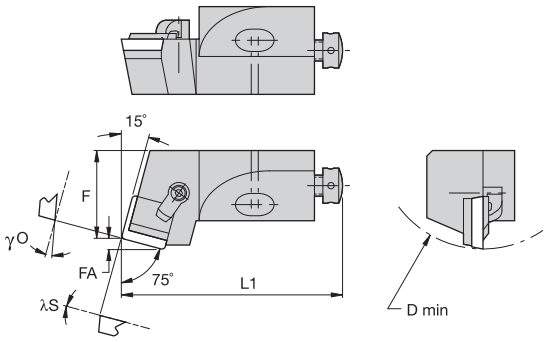
Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.756	**SM840**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B85–B86 and B129–B130 for inserts.



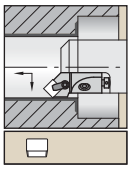
CSRP -15°

catalog number	D min	F	L1	FA	λS°	γO°	gage insert
right hand							
CSRPR10CA3	1.575	.551	1.97	.09	0.0	0.0	SP..090308/SP..322
CSRPR12CA4	1.969	.787	2.17	.12	3.0	0.0	SP..120308/SP..422
left hand							
CSRPL10CA3	1.575	.551	1.97	.09	0.0	0.0	SP..090308/SP..322
CSRPL12CA4	1.969	.787	2.17	.12	3.0	0.0	SP..120308/SP..422

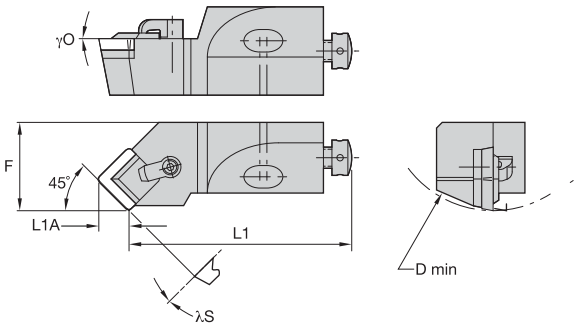
Spare Parts



D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B85–B86 and B129–B130 for inserts.



CSSP 45°

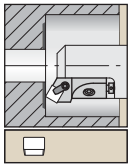
catalog number	D min	F	L1	FA	L1A	λS°	γO°	gage insert
right hand								
CSSPR10CA3	1.575	.551	1.7323	.25	.239	0.0	0.0	SP..090308/SP..322
CSSPR12CA4	1.969	.787	1.8504	.34	.328	0.0	0.0	SP..120308/SP..422
CSSPR16CA4	2.362	.984	2.0866	.34	.328	0.0	0.0	SP..120308/SP..422
left hand								
CSSPL10CA3	1.575	.551	1.7323	.25	.239	0.0	0.0	SP..090308/SP..322
CSSPL12CA4	1.969	.787	1.8504	.34	.328	0.0	0.0	SP..120308/SP..422
CSSPL16CA4	2.362	.984	2.0866	.34	.328	0.0	0.0	SP..120308/SP..422

Spare Parts

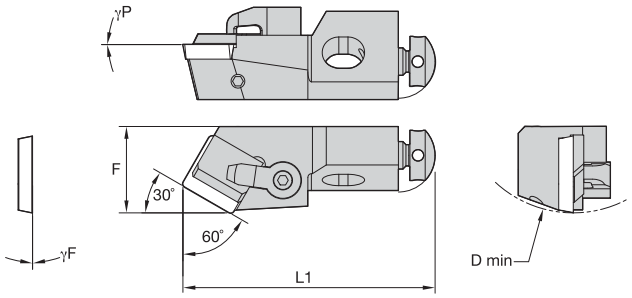


D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**SM840**	**CS109PKG**	2 mm	**CKM34**	**STCM9**	2.5 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.362	**SM840**	**CS109PKG**	2 mm	**CKM34**	**STCM9**	2 mm	**KUAM25**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

NOTE: Select spare parts based off of D min and insert size selected.



See pages B85–B86 and B129–B130 for inserts.

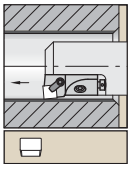


CSTP 30°

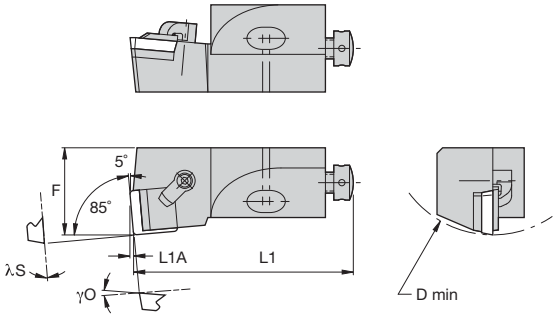
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
CSTPR10CA3	1.575	.354	1.97	0.0	0.0	SP..090308/SP..322

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B85–B86 and B129–B130 for inserts.

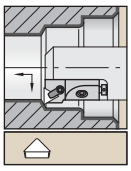


CSYP 5°

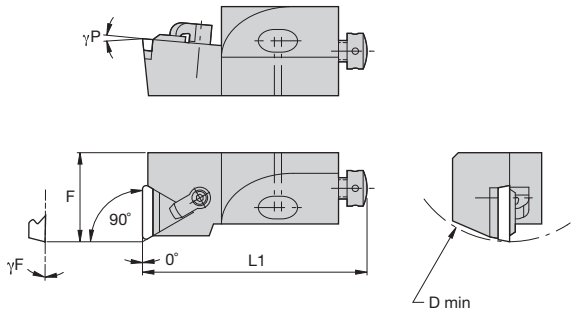
catalog number	D min	F	L1	L1A	λS°	γO°	gage insert
right hand							
CSYPR10CA3	1.575	.551	1.97	.030	0.0	5.0	SP..090308/SP..322
left hand							
CSYPL10CA3	1.575	.551	1.97	.030	0.0	5.0	SP..090308/SP..322

Spare Parts

D min	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B86–B87 and B130 for inserts.



CTFP 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
CTFPR10CA2	1.575	.551	1.97	0.0	5.0	TP..110304/TP..421
CTFPR12CA3	1.969	.787	2.17	0.0	5.0	TP..160308/TP..322
CTFPR16CA3	2.362	.984	2.48	0.0	5.0	TP..160308/TP..322
CTFPR20CA4	2.756	.984	2.76	0.0	5.0	TP..220408/TP..432
left hand						
CTFPL10CA2	1.575	.551	1.97	0.0	5.0	TP..110304/TP..421
CTFPL12CA3	1.969	.787	2.17	0.0	5.0	TP..160308/TP..322
CTFPL16CA3	2.362	.984	2.48	0.0	5.0	TP..160308/TP..322

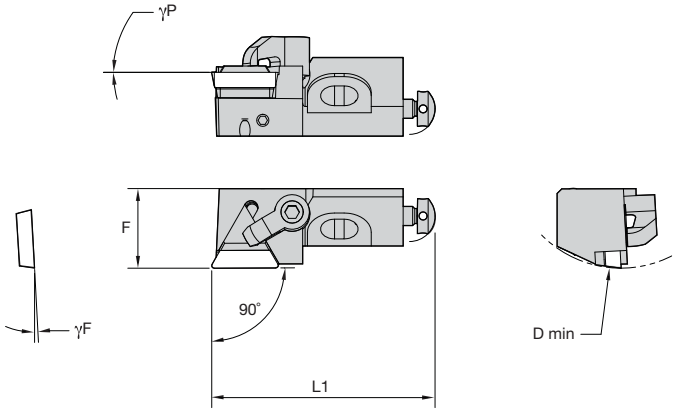
Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**SM841**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SM837**	**MS125**	2.5 mm	**CKM35**	**STCM8**	2.5 mm	**KUAM25**	4 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B86–B87 and B130 for inserts.



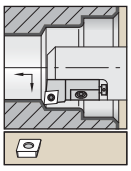
CTGP 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
CTGPR10CA2	1.575	.551	1.97	3.0	0.0	TP..110304/TP..421
CTGPR12CA3	1.969	.787	2.17	3.0	0.0	TP..160308/TP..322
CTGPR16CA3	2.362	.984	2.48	3.0	0.0	TP..160308/TP..322
CTGPR20CA4	2.756	.984	2.76	3.0	0.0	TP..220408/TP..432
left hand						
CTGPL12CA3	1.969	.787	2.17	3.0	0.0	TP..160308/TP..322
CTGPL20CA4	2.756	.984	2.76	3.0	0.0	TP..220408/TP..432

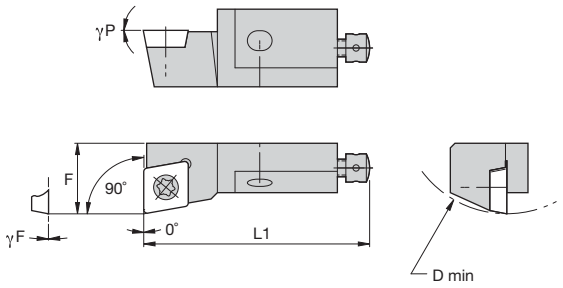
Spare Parts



D min	shim	shim screw	hex	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	–	–	–	**CKM34**	**STCM38**	2 mm	**KUAM22**	2 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**SM841**	**MS109**	2 mm	**CKM34**	**STCM38**	2 mm	**KUAM24**	2 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**
2.756	**SM837**	**MS125**	2.5 mm	**CKM35**	**STCM8**	2.5 mm	**KUAM25**	4 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B92–B95 for inserts.



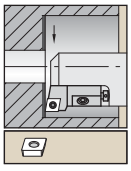
SCFP 0°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCFPR06CA05	.787	.315	.98	0.0	0.0	CP..050204/CP..18151
SCFPR08CA06	.984	.394	1.26	0.0	0.0	CP..060204/CP..2151
SCFPR10CA09	1.575	.551	1.97	0.0	0.0	CPMT09T308
left hand						
SCFPL06CA05	.787	.315	.98	0.0	0.0	CP..050204/CP..18151
SCFPL08CA06	.984	.394	1.26	0.0	0.0	CP..060204/CP..2151

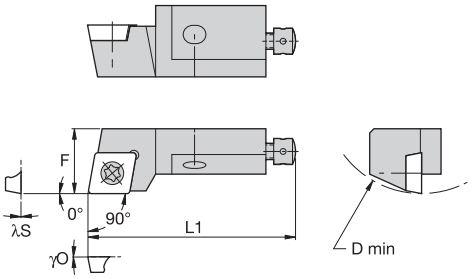
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.787	**MS1933**	T7	**KUAM34**	1.5 mm	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**

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



See pages B92–B95 for inserts.



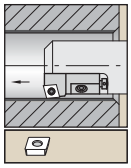
SCGP 0°

catalog number	D min	F	L1	λS°	γO°	gage insert
right hand						
SCGPR08CA06	.984	.394	1.26	0.0	0.0	CP..060204/CP..2151
left hand						
SCGPL08CA06	.984	.394	1.26	0.0	0.0	CP..060204/CP..2151

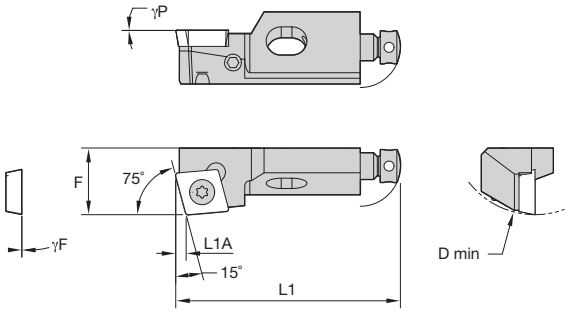
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B92–B95 for inserts.



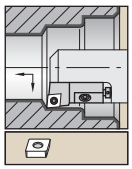
SCKP 15°

catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
SCKPR08CA06	.984	.394	1.26	.061	0.0	0.0	CP..060204/CP..2151
left hand							
SCKPL08CA06	.984	.394	1.26	.061	0.0	0.0	CP..060204/CP..2151

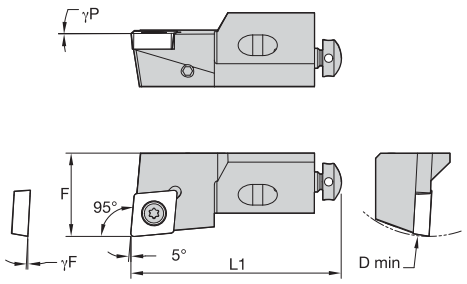
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B88–B91 for inserts.

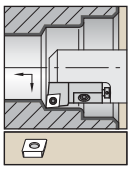


SCLC -5°

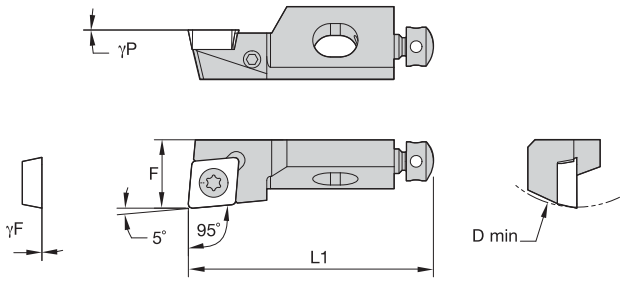
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCLCR12CA12	1.969	.787	2.17	-3.0	0.0	CC..120408/CC..432
SCLCR16CA12	2.362	.984	2.48	-3.0	0.0	CC..120408/CC..432
left hand						
SCLCL12CA12	1.969	.787	2.17	-3.0	0.0	CC..120408/CC..432
SCLCL16CA12	2.362	.984	2.48	-3.0	0.0	CC..120408/CC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B92–B95 for inserts.



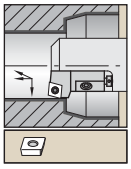
SCLP -5°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCLPR06CA05	.787	.315	.984	0.0	0.0	CP..050204/CP..18151
SCLPR08CA06	.984	.394	1.260	0.0	0.0	CP..060204/CP..2151
SCLPR10CA09	1.575	.551	1.969	0.0	0.0	CP..09T308/CP..3252
left hand						
SCLPL06CA05	.787	.315	.984	0.0	0.0	CP..050204/CP..18151
SCLPL08CA06	.984	.394	1.260	0.0	0.0	CP..060204/CP..2151
SCLPL10CA09	1.575	.551	1.969	0.0	0.0	CP..09T308/CP..3252

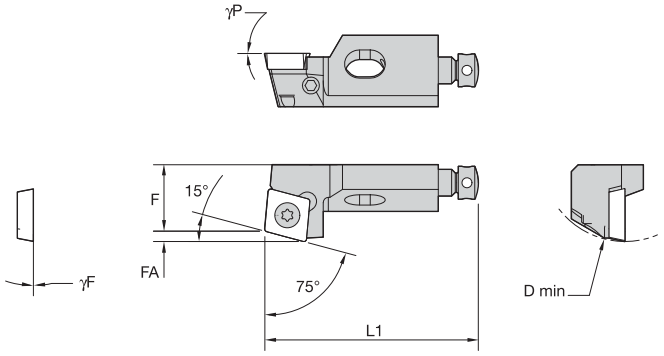
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.787	**MS1933**	T7	**KUAM34**	1.5 mm	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**

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



See pages B92–B95 for inserts.



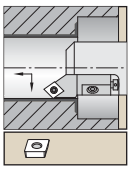
SCRP 15°

catalog number	D min	F	FA	L1	γF°	γP°	gage insert
right hand							
SCRPR08CA06	.984	.394	.059	1.26	0.0	0.0	CP..060204/CP..2151
left hand							
SCRPL08CA06	.984	.394	.059	1.26	0.0	0.0	CP..060204/CP..2151

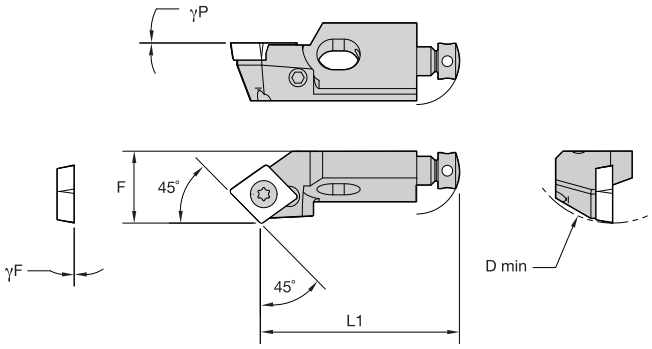
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B92–B95 for inserts.



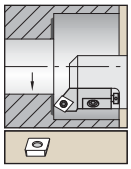
SCSP 45°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SCSPR06CA05	.787	.315	.83	0.0	0.0	CP..050204/CP..18151
SCSPR08CA06	.984	.394	1.10	0.0	0.0	CP..060204/CP..2151
left hand						
SCSPL06CA05	.787	.315	.83	0.0	0.0	CP..050204/CP..18151
SCSPL08CA06	.984	.394	1.10	0.0	0.0	CP..060204/CP..2151

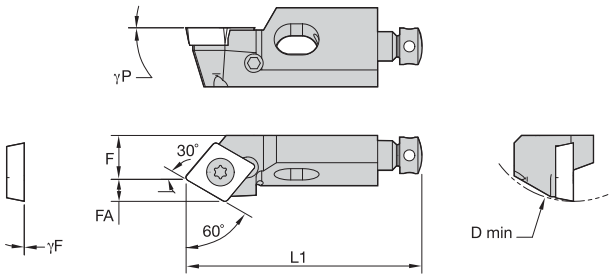
Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
.787	**MS1933**	T7	**–**	–	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B92–B95 for inserts.



SCTP 30°

catalog number	D min	F	FA	L1	γF°	γP°	gage insert
right hand							
SCTPR06CA05	.787	.217	.102	.98	0.0	0.0	CP..050204/CP..18151
SCTPR08CA06	.984	.236	.116	1.26	0.0	0.0	CP..060204/CP..2151
left hand							
SCTPL08CA06	.984	.236	.116	1.26	0.0	0.0	CP..060204/CP..2151

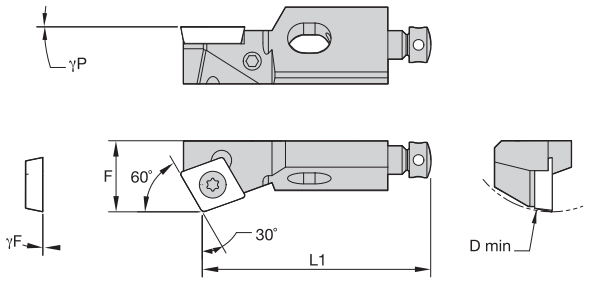
Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
.787	**MS1933**	T7	**–**	–	**KUAM35**	**MS2173**	2 mm	**CSWM 035 040**
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B92–B95 for inserts.



SCWP 30°

catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
SCWPR08CA06	.984	.394	1.26	.118	0.0	0.0	CP..060204/CP..2151
left hand							
SCWPL08CA06	.984	.394	1.26	.118	0.0	0.0	CP..060204/CP..2151

Spare Parts

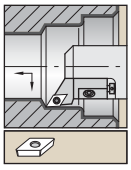




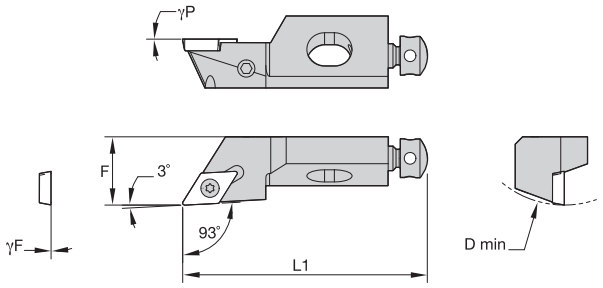


D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**

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



See pages B98–B100 for inserts.



SDJP -3°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SDJPR10CA07	1.575	.551	1.97	0.0	0.0	DP..070204/DP..2151
left hand						
SDJPL10CA07	1.575	.551	1.97	0.0	0.0	DP..070204/DP..2151

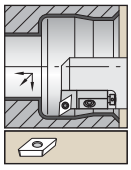
Spare Parts



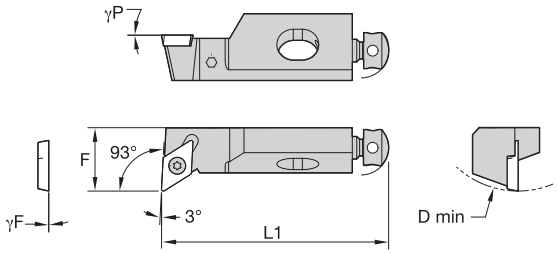




D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B98–B100 for inserts.

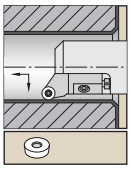


SDUP -3°

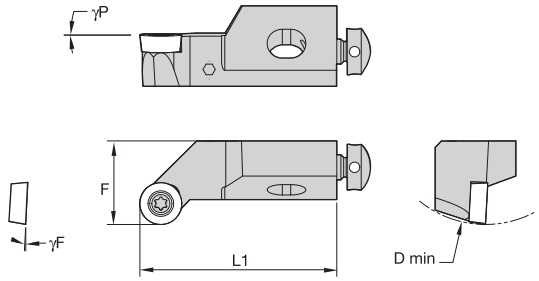
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SDUPR10CA07	1.575	.551	1.97	0.0	0.0	DP..070204/DP..2151

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B100–B102 for inserts.

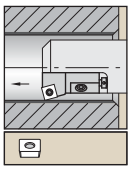


SRGC

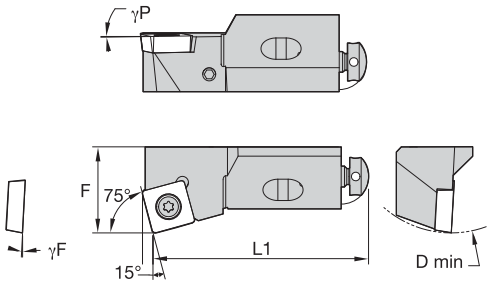
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SRGCR08CA06	.984	.394	1.26	-4.0	0.0	RC..0602M0/RC..215
SRGCR10CA08	1.575	.551	1.97	-3.0	0.0	RC..0803M0/RC..0803M0
SRGCR12CA10	1.969	.787	2.17	-3.0	0.0	RC..10T3M0/RC..10T3M0
left hand						
SRGCL08CA06	.984	.394	1.26	-4.0	0.0	RC..0602M0/RC..215
SRGCL12CA10	1.969	.787	2.17	-3.0	0.0	RC..10T3M0/RC..10T3M0

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1153**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1154**	T9	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

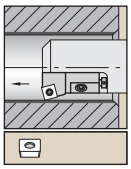


SSKC 15°

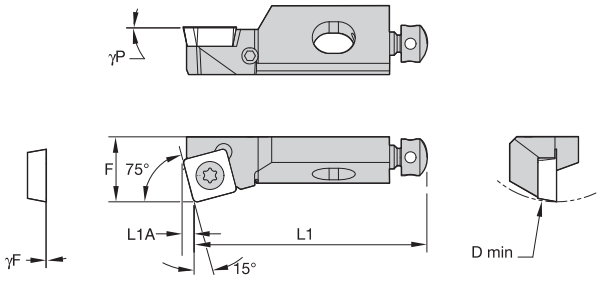
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSKCR12CA12	1.969	.787	2.17	-3.0	0.0	SC..120408/SC..432
SSKCR16CA12	2.362	.984	2.48	-3.0	0.0	SC..120408/SC..432
left hand						
SSKCL12CA12	1.969	.787	2.17	-3.0	0.0	SC..120408/SC..432

Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
1.969	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B104–B106 for inserts.

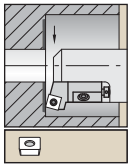


SSKP 15°

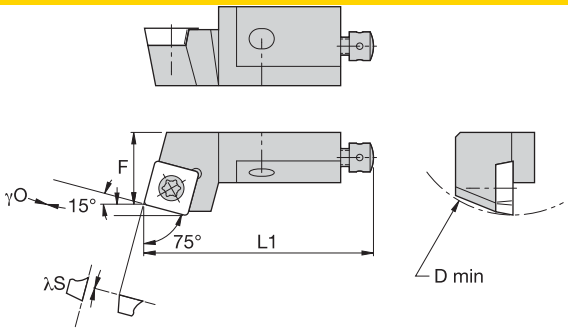
catalog number	D min	F	L1	L1A	γF°	γP°	gage insert
right hand							
SSKPR10CA09	1.575	.551	1.97	.09	0.0	0.0	SP..09T308/SP..3252
left hand							
SSKPL10CA09	1.575	.551	1.97	.09	0.0	0.0	SP..09T308/SP..3252

Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
1.575	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

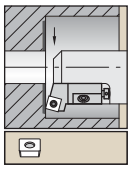


SSRC 15°

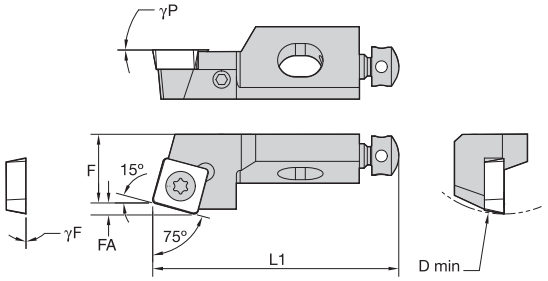
catalog number	D min	F	L1	γO°	λS°	gage insert
right hand **SSRCR12CA12**	1.969	.787	2.17	0.0	-3.0	SC..120408/SC..432
left hand **SSRCL12CA12**	1.969	.787	2.17	0.0	-3.0	SC..120408/SC..432

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.969	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B104–B106 for inserts.

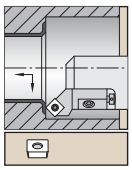


SSRP 15°

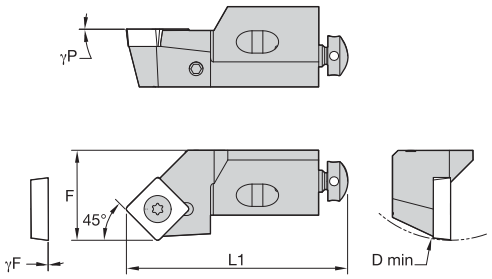
catalog number	D min	F	FA	L1	γF°	γP°	gage insert
right hand **SSRPR10CA09**	1.575	.551	.09	1.97	0.0	0.0	SP..09T308/SP..3252
left hand **SSRPL10CA09**	1.575	.551	.09	1.97	0.0	0.0	SP..09T308/SP..3252

Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
1.575	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**



See pages B103–B104 for inserts.

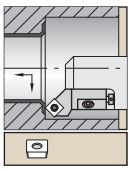


SSSC 45°

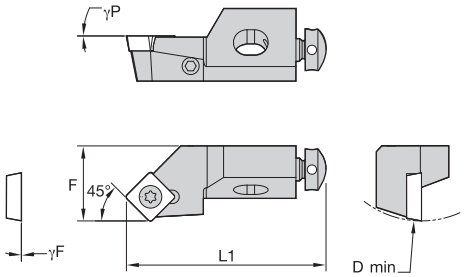
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSSCR12CA12	1.969	.787	1.85	-3.0	0.0	SC..120408/SC..432
SSSCR16CA12	2.362	.984	2.09	0.0	0.0	SC..120408/SC..432
left hand						
SSSCL12CA12	1.969	.787	1.85	-3.0	0.0	SC..120408/SC..432

Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
1.969	**MS1157**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**MS1157**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**



See pages B104–B106 for inserts.

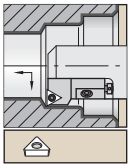


SSSP 45°

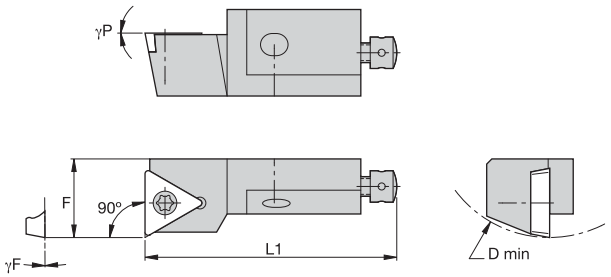
catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
SSSPR10CA09	1.575	.551	1.73	0.0	0.0	SP..09T308/SP..3252
SSSPR12CA09	1.969	.787	1.85	0.0	0.0	SP..09T308/SP..3252
left hand						
SSSPL10CA09	1.575	.551	1.73	0.0	0.0	SP..09T308/SP..3252

Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
1.575	**MS1155**	T15	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**



See pages B109–B112 for inserts.



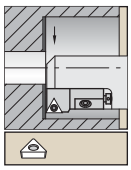
STFP

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
STFPR08CA09	.984	.394	1.26	0.0	0.0	TP..090204/TP..18151
STFPR10CA11	1.575	.551	1.97	0.0	0.0	TP..110204/TP..2151
STFPR12CA16	1.969	.787	2.17	0.0	0.0	TP..16T308/TP..3252
STFPR16CA16	2.362	.984	2.48	0.0	0.0	TP..16T308/TP..3252
left hand						
STFPL08CA09	.984	.394	1.26	0.0	0.0	TP..090204/TP..18151
STFPL10CA11	1.575	.551	1.97	0.0	0.0	TP..110204/TP..2151
STFPL12CA16	1.969	.787	2.17	0.0	0.0	TP..16T308/TP..3252

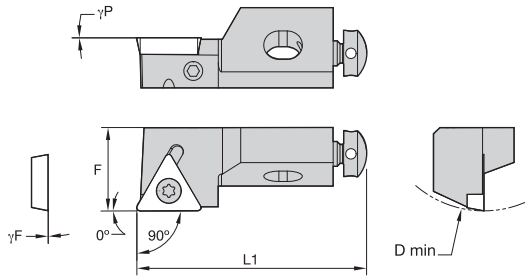
Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
.984	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**MS1155**	T15	**KUAM25**	4 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

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



See pages B109–B112 for inserts.



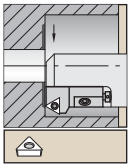
STGP

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
STGPR08CA09	.984	.394	1.26	0.0	0.0	TP..090204/TP..18151
STGPR10CA11	1.575	.551	1.97	0.0	0.0	TP..110204/TP..2151
STGPR12CA16	1.969	.787	2.17	0.0	0.0	TP..16T308/TP..3252
left hand						
STGPL08CA09	.984	.394	1.26	0.0	0.0	TP..090204/TP..18151
STGPL10CA11	1.575	.551	1.97	0.0	0.0	TP..110204/TP..2151

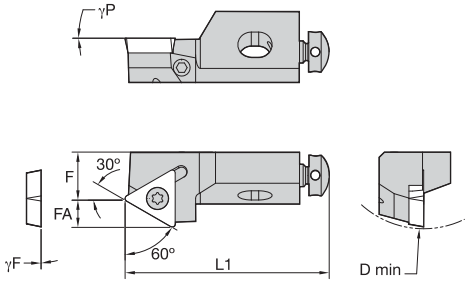
Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
.984	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**

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



See pages B109–B112 for inserts.



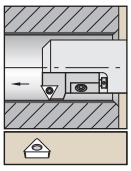
STTP 30°

catalog number	D min	F	FA	L1	γF°	γP°	gage insert
right hand							
STTPR08CA09	.984	.236	.167	1.26	0.0	0.0	TP..090204/TP..18151
STTPR10CA11	1.575	.354	.195	1.97	0.0	0.0	TP..110204/TP..2151
STTPR12CA16	1.969	.512	.282	2.17	0.0	0.0	TP..16T308/TP..3252

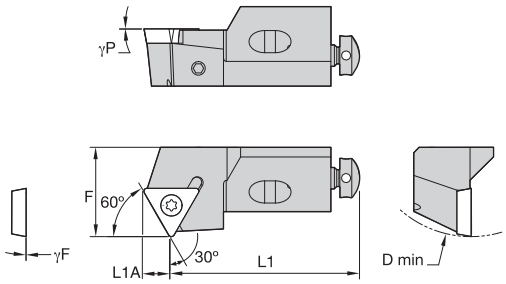
Spare Parts

D min	insert screw	Torx	radial adjusting screw	hex	axial adjusting screw	mounting screw	hex	washer
.984	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**

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



See pages B109–B112 for inserts.



STWP 30°

catalog number	D min	F	L1	γF°	γP°	gage insert
right hand						
STWPR08CA09	.984	.394	1.10	0.0	0.0	TP..090204/TP..18151
STWPR10CA11	1.575	.551	1.73	0.0	0.0	TP..110204/TP..2151
STWPR12CA16	1.969	.787	1.85	0.0	0.0	TP..16T308/TP..3252
STWPR16CA16	2.362	.984	2.09	0.0	0.0	TP..16T308/TP..3252

Spare Parts

D min	 insert screw	Torx	 radial adjusting screw	hex	 axial adjusting screw	 mounting screw	hex	 washer
.984	**MS1152**	T7	**KUAM34**	1.5 mm	**KUAM20**	**MS2175**	2.5 mm	**CSWM 040 050**
1.575	**MS1153**	T7	**KUAM28**	2 mm	**KUAM30**	**191.405**	4 mm	**CSWM 060 050**
1.969	**MS1155**	T15	**KUAM23**	2.5 mm	**KUAM31**	**191.406**	4 mm	**CSWM 060 050**
2.362	**MS1155**	T15	**KUAM25**	2.5 mm	**KUAM32**	**191.407**	5 mm	**CSWM 080 050**

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



Grooving and Cut-Off

Grooving Application Guide D2–D3

Grades and Grade Descriptions D4–D7

A2 Cut-Off D8–D19, D22–D25

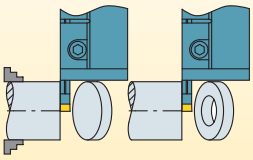
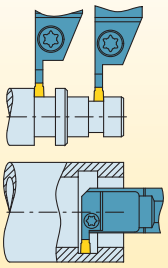
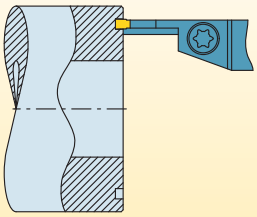
A3 Deep Grooving D26–D63

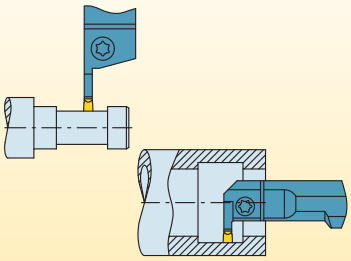
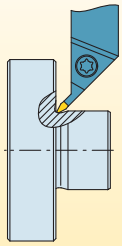
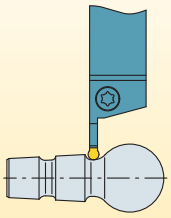
VG Deep Grooving D64–D68

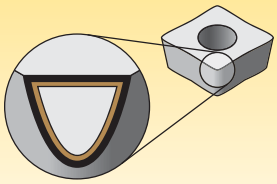
A4 Grooving and Turning D70–D121

Top Notch Grooving D122–D154

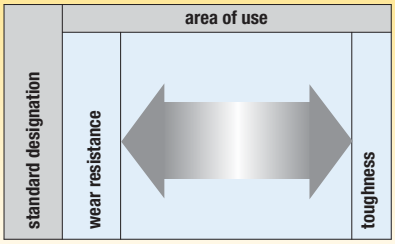
KGF and KGT Cut-Off Inserts D158–D161

	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–.375" (0,8–9,5mm). • Cutting depths from .050–.500" (1,27–12,70mm). • Chip control, positive rake, and neutral flat top inserts are available. **O.D. Application** • Integral shank toolholders and KM™ heads are available. **I.D. Application** • Boring bars with a .453" (11,5mm) minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • Standard inserts: 2.125–13" (54–330mm) depending on size. • NF/NFD face grooving inserts: .940–2.25" (24–57mm). • All have unlimited maximum diameter. **Cutting Width Range** • Standard inserts: .031–.375" (0,8–9,5mm). • NF/NFD face grooving inserts: .079–.250" (2–6,35mm). **Cutting Depth Range** • Standard inserts: .050–.500" (1,27–12,7mm). • NF/NFD face grooving inserts: .150–.250" (3,8–6,35mm).
A4™ Grooving and Turning	**Cut-Off Capabilities** • Cut-off widths from .059–.159" (1,5–4,05mm). • Satisfies extreme demands for rigidity and dimensional accuracy. • Integral screw-clamping toolholders with .670" (17mm) maximum cutting depth available. • Economical double-edge inserts.	**Inserts** • Cutting widths from .079–.396" (2–10,05mm). • Precision ground and molded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from .55–1.02" (14–26mm). **I.D. Application** • Boring bars with .984" (25mm) minimum bore diameter. • Cutting widths from .079–.250" (2–6,35mm).	**Minimum Face Groove Diameter Capabilities** • .630" (16mm) minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from .079–.394" (2–10,05mm). **Cutting Depth Range** • Cutting depths from .47–.94" (12–24mm).
A3™ Deep Grooving generally recommended for cutting depth/width ratios of more than 1.5		**Inserts** • Cutting widths from .093–.396" (2,36–10,05mm). • Precision ground and molded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from .394–1.26" (10–32mm). **I.D. Application** • Boring bars with 1.26" (32mm) minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • .984" (25mm) minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from .118–.250" (3–6,35mm). **Cutting Depth Range** • Cutting depths from .393–1.26" (10–32mm).
A2™ Cut-Off	**Cut-Off Capabilities** • Cut-off widths from .055–.315" (1,4–8mm). • Left- and right-hand styles with 6–16° lead angles. • Self-clamping blades and screw-clamping integral shank toolholders are available. • Single-edge inserts for maximum depth capability.		

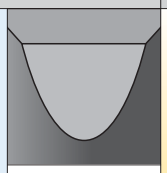
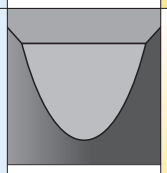
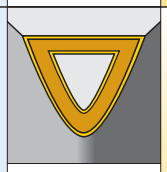
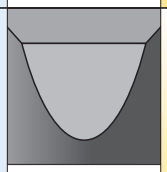
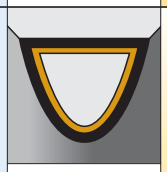
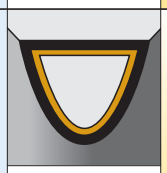
	Grooving and Turning	Undercutting	Profiling
Application			
Top Notch™ Grooving generally recommended for cutting depth/width ratios of 1.5 or less		**Top Notch Undercutting Capabilities** • Undercutting insert widths from .094–.156" (2,4–4mm). • Economical double-ended inserts.	**Recommended for Moderate to Heavy Stock Removal at Shallow Profile Depths** **Full Radius Inserts** • Cutting widths from .062–.250" (1,57–6,35mm). • Cutting depths from .094–.250" (2,39–6,35mm). **O.D. Application** • Integral shank toolholders and KM heads are available.
A4™ Grooving and Turning	**Recommended for Heavy Stock Removal, Particularly in Turning Applications** **Inserts** • Cutting widths from .079–.396" (2–10,05mm). • Double-ended, precision ground, and molded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM™ heads are available. • Cutting depths from .55–1.02" (14–26mm). **I.D. Application** • Boring bars with .984" (25mm) minimum bore diameter. • Cutting widths from .079–.250" (2–6,35mm).		**Recommended for Heavy Stock Removal** **Full Radius Inserts** • Cutting widths from .079–.396" (2–10,05mm). **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from .55–1.02" (14–26mm).
A3™ Deep Grooving generally recommended for cutting depth/width ratios of more than 1.5	**Recommended for Light Cutting** **Inserts** • Cutting widths from .093–.396" (2,36–10mm). • Precision ground and molded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from .394–1.26" (10–32mm). **I.D. Application** • Boring bars with 1.26" (32mm) minimum bore diameter.	**Full Radius Undercutting** • Full radius inserts with cutting widths from .118–.315" (3–8mm) at 45° lead angle. **35° Insert Undercutting** • 35° V-form inserts for profiling undercuts. • Toolholder lead angles of 45°, 93°, and 117.5°.	**Recommended for Light Cutting** • Full radius inserts with cutting widths from .118–.315" (3–8mm). • 1.26" (32mm) maximum cutting depth. • Integral shank toolholders and modular KM heads are available. • 35° V-form inserts are also available.
A2™ Cut-Off			

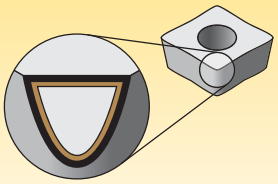


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

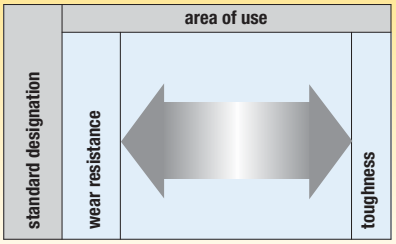


Grade

Coating	Grade Description	05	10	15	20	25	30	35	40	45
K68  C3	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** The K68 grade has excellent abrasion resistance for machining cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and as an alternative to the K313 grade on most high-temp alloys. Use as a general-purpose grade for non-ferrous materials.									
K313  C3–C4	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temp 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.									
KT315  C3, C7	**Composition:** A multilayered, 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.									
K1025 (KMF)  C2, C6	**Composition:** Medium in hardness and binder content unalloyed WC/Co fine-grain grade. **Application:** For machining high-temp alloys, titanium, and non-ferrous workpiece materials under unfavorable conditions.									
KCP10  C3, C7	**Composition:** A specially engineered cobalt-enriched carbide grade with thick MTCVD-TiCN-Al_2O_3 coating for maximum crater-wear, deformation, and abrasion resistance for high-speed machining. **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 smooth coating provides good resistance to edge build-up and microchipping and produces excellent surface finishes.									
KCP25  C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer MTCVD-TiCN-Al_2O_3 coating with superior interlayer adhesion. **Application:** General-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance along with excellent insert edge strength. Coating layers offer wear resistance and the post-coat treatment minimizes microchipping and improves coating adhesion to the substrate for long tool life.									

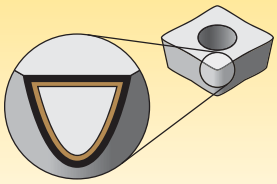


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

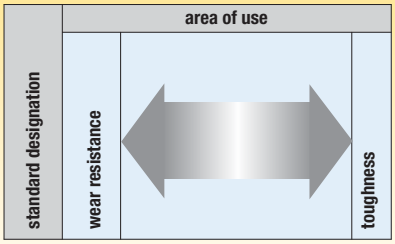


Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KCU10	C3–C4	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10 grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability.		P	P	P					
				M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
				H							
KC5010	C3–C4	**Composition:** An advanced PVD TiAlN coating over a very deformation-resistant unalloyed carbide 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	P	P					
				M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
				H							
KC5510	C3–C4	**Composition:** An advanced PVD TiAlN-coated fine-grain tungsten carbide grade. **Application:** The KC5510 grade is specifically engineered for the productive machining of high-temp alloys. The fine-grained tungsten carbide 6% cobalt substrate has excellent toughness and deformation resistance while the advanced PVD coating enables metal cutting speeds double those of conventional PVD-coated cutting tools.		P	P	P					
				M	M	M					
				K	K	K					
				N	N	N					
				S	S	S					
				H							
KCU25	C2, C6	**Composition:** An advanced PVD grade with hard AlTiN coating and ultra-fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU25 grade is ideal for general machining of most steels, stainless steels, high-temp alloys, titanium, irons and non-ferrous materials, in a wide range of speeds and feeds, with improved edge toughness for interrupted cut and high feed rates.			P	P	P				
					M	M	M				
					K	K	K				
					N	N	N				
					S	S	S				
KC5025	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-temp alloys, titanium, irons, and non-ferrous materials. Speeds may vary from low to medium and will handle interruptions and high feed rates.			P	P	P				
					M	M	M				
					K	K	K				
					N	N	N				
					S	S	S				
KC5525	C2–C6	**Composition:** Advanced PVD TiAlN-coated fine-grain high-cobalt carbide grade. **Application:** The KC5525 grade utilizes the same advanced PVD coating as the KC5510 grade in conjunction with a fine-grained tungsten carbide 10% cobalt substrate. The higher cobalt enables 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-temp alloys.				P	P	P			
						M	M	M			
						K	K	K			
						N	N	N			
						S	S	S			

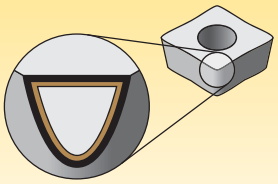


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

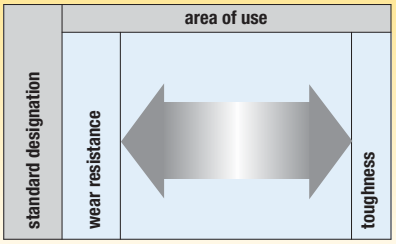


Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KC5410	C3–C4	**Composition:** PVD TiB_2 coating over a thermal deformation-resistant unalloyed substrate. **Application:** The KC5410 grade is designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminum, aluminum alloys, and magnesium alloys. Harder than TiN and TiAlN coatings, TiB_2 has an extremely smooth surface for improved surface friction, chip flow, and wear and built-up edge resistance. Unalloyed and fine-grained offering sharp edges and excellent edge integrity. Inserts with a ground periphery are polished before coating; molded inserts have a light hone.										
KC9110	C3, C7	**Composition:** Specially engineered, cobalt-enriched carbide grade with thick K-MTCVDTiCN coating layer, an Al_2O_3 layer of controlled grain size, and outer layers of TiCN and TiN for maximum abrasion and wear resistance for high-speed machining. **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. A balanced combination of deformation resistance and edge toughness. The smooth coating resists built-up edge and microchipping. For rougher cutting, use the KC9125 grade.										
KC9125	C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer K-MTCVD $TiCNAl_2O_3$-TiCN-TiN coating with superior interlayer adhesion. **Application:** General-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance along with excellent bulk toughness and insert edge strength. Coating layers offer wear resistance over a wide range of machining conditions and reduce frictional heat, minimize microchipping, and improve workpiece surface finishes. Performs well in moderately heavy roughing to semi-finishing cuts. Use the KC9110 grade for finishing cuts.										
KC9320	C3–C4	**Composition:** A proprietary specially toughened MTCVD-TICN and Al_2O_3 coating over a wear-resistant substrate. **Application:** KC9320 is specifically engineered to maximize coating adhesion and edge strength making this grade ideal in wet interrupted cutting of ductile and gray irons. It can be in a wide range of applications from finishing to roughing to maximize productivity wherever strength and reliability are needed.										
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.										
KD1400	C4	**Composition:** An ultra-fine-grain polycrystalline diamond (PCD) tip brazed onto a carbide substrate. **Application:** Designed for general-purpose turning of primarily non-ferrous materials. It can be applied over a wide range of continuous to interrupted cuts where superior surface finish is needed. Use on low to medium silicon-content aluminum alloys, non-metallics, copper, and brass- and zinc-based alloys. The ultra-fine-grain diamond particle size enables superior surface finishes while ensuring the best mechanical shock resistance of any PCD cutting tool.										



Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.



Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KD1405	C4	**Composition:** A pure CVD deposited diamond sheet tool directly brazed to a carbide substrate. **Application:** The KD1405 grade is Kennametal's and the industry's most abrasion-resistant tool material for non-ferrous and non-metallic materials. The KD1405 grade inserts are not as tough as the KD1400 and KD1425 grades but can withstand moderate interruptions when turning and traditional face milling operations.	N	N	N						
KB1630	—	**Composition:** A high CBN content, PCBN tip brazed onto a carbide insert. **Application:** The KB1630 grade is designed for roughing to finishing in interrupted cuts on hardened steels (>45 HRC). It can also be applied on gray cast iron, chilled irons, high-chrome alloyed steels, and sintered powdered metals. The tipped PCBN insert is available in a wide range of insert styles including positive rake geometries that are ideally suited for boring applications.	K	K	K						
			S	S	S						
			H	H	H		H	H	H		
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.	H	H	H	H	H	H			



A2™ Cut-Off • High-Performance Tools to Maximize Productivity!

The A2 platform is the ideal system for parting operations on a wide variety of workpiece materials. It works well in smooth and interrupted cuts in both wet and dry operations. Now it is available in KCU25™ for superior edge toughness and excellent wear resistance.

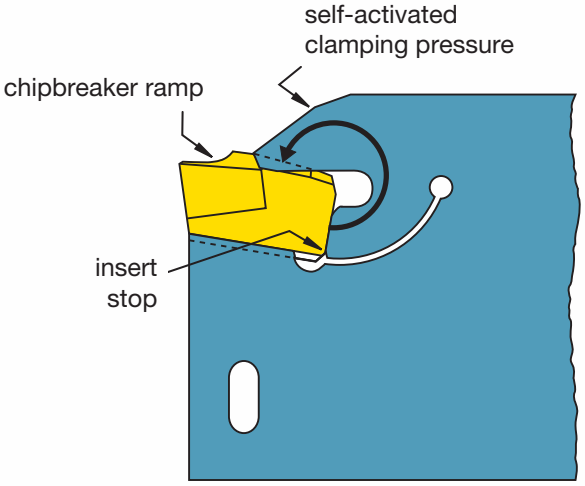
Features and Benefits

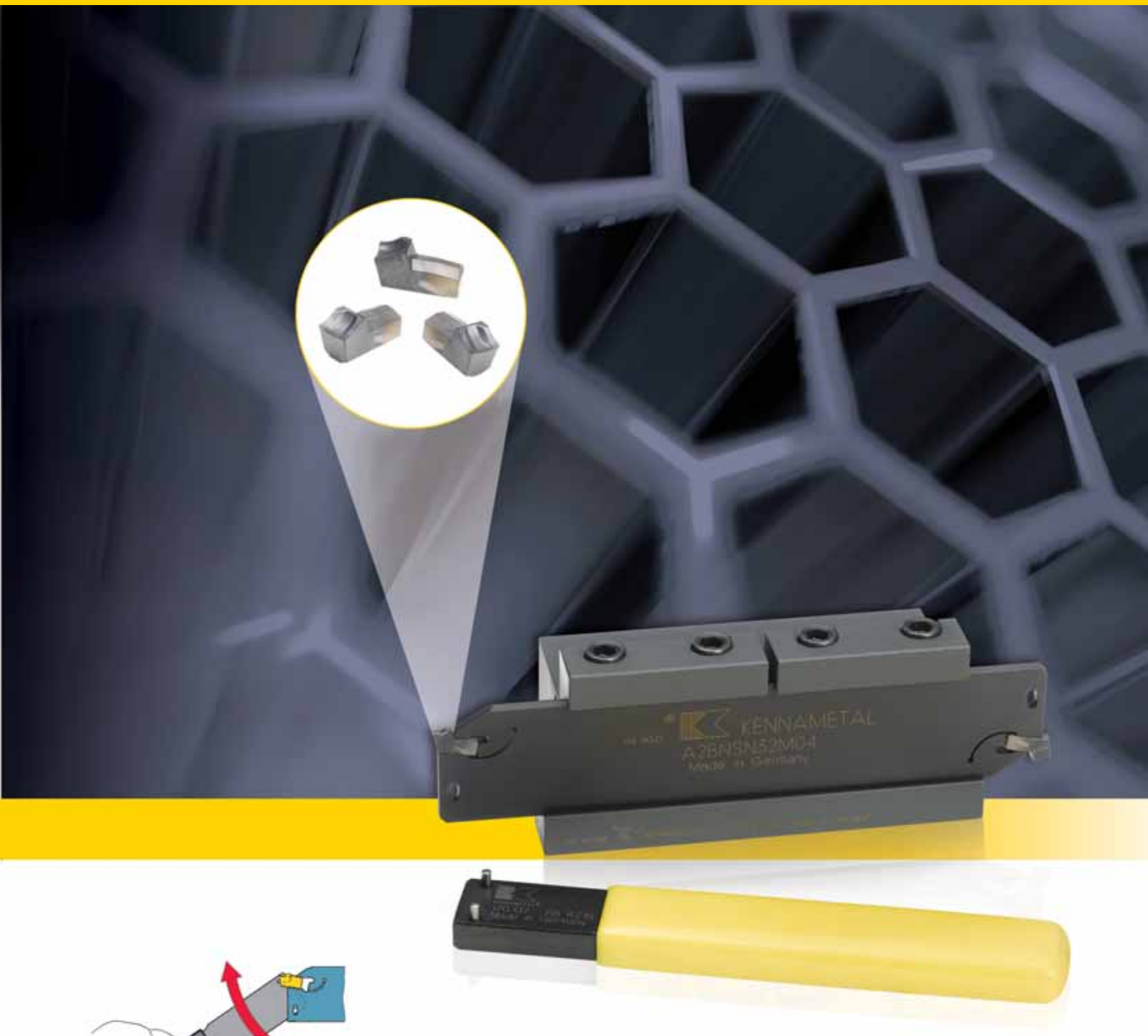
Innovative A2 Insert Design

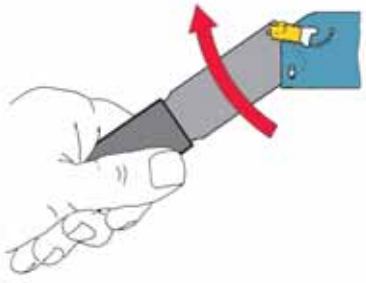
- V-prisms on both top and bottom enable higher clamping force to prevent insert movement, even when cutting at high-feed rates.
- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Positive rake cutting action combined with Kennametal's high-performance PVD coatings result in superior tool life and chip control.

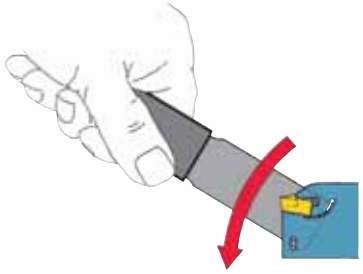
A2™ Insert Stop Design

- 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.





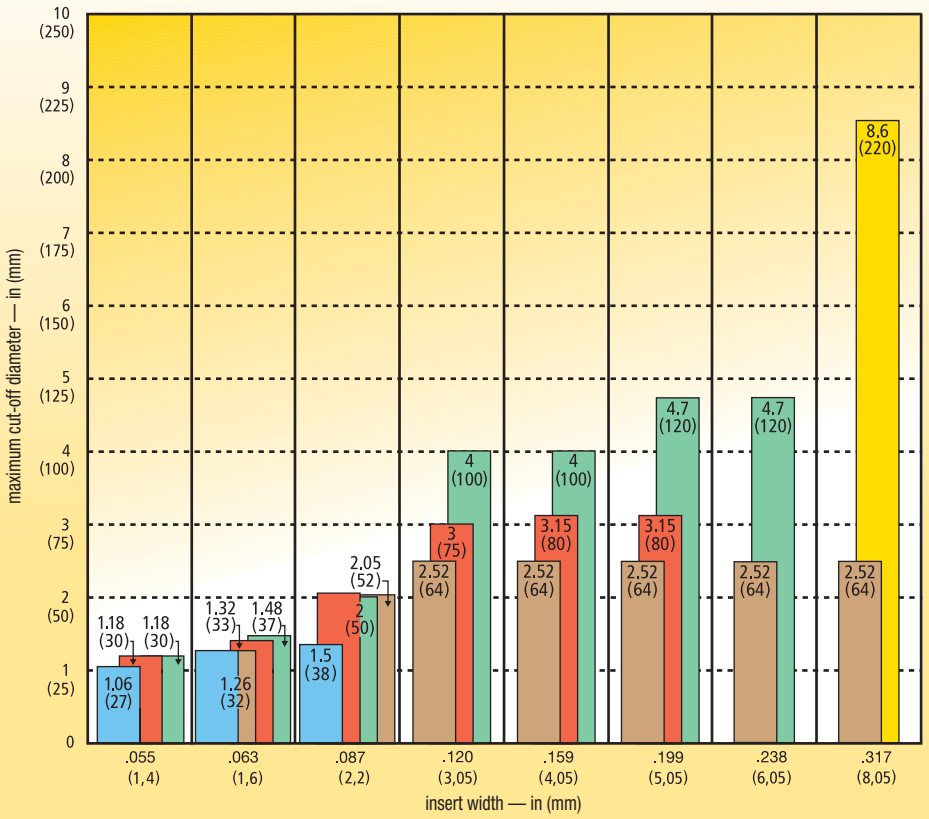




Quick and Easy Insert Indexing

- A convenient indexing wrench is available to minimize downtime by enabling fast removal and insertion without damage to the cutting edge.

Step 1 • Select insert width and holder type



blade height
19mm
26mm
32mm
52mm
Integral Shank Toolholders

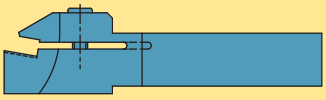
What you need to know:

- Cut-off diameter.
- Part/machine requirements.

For required cut-off diameter, select insert width and holder type based on the part and machine requirement:

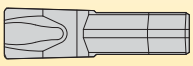
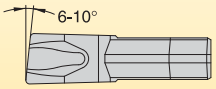
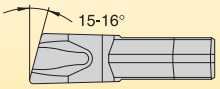
- To maximize rigidity, select the largest possible blade height or an integral shank toolholder.
- Diameters shown are for cut-off to center. Maximum cut-off depth to a through-hole depth is one half of the diameter.
- To determine depth capability for cut-off to a through-hole on integral shank or reinforced blades, please refer to listing for that tool in this catalog.

Toolholder Type

blade: (self-clamping)	blade: (self-clamping, reinforced version)	toolholder: (with clamping screw)
	 Available in 26mm and 32mm 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.

Step 2 • Select the insert lead angle

- Part type.
- Burr and center stub considerations.
- Cut-off to center or through hole.

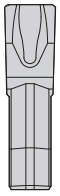
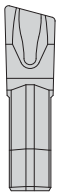
	neutral (0°)	right/left 6–10°	right/left 15–16°
insert type			
recommended application	• For cutting off solid workpieces. • Center stub will form on cut-off part. • Eliminates lateral deflection. • Best for deep cut-off depths.	• For cutting off solid workpieces with reduced formation of center stub. • 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

Step 3 • Select chipbreaker style and feed rate

- Lead angle or neutral insert.
- Workpiece material.

-CL Cut-Off Low Feed	-CF Cut-Off Fine	-CM Cut-Off Medium	-CR Cut-Off Rough
			
• Excellent chip evacuation in low feed applications. • Offers improved stability and rigidity in difficult-to-control applications.	• 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	P	M	K	N	S	H
	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)	—	—	—	—	—
	N-CL .002–.006 (0,05–0,15)	N-CL .002–.005 (0,05–0,12)	—	N-CL .002–.007 (0,05–0,18)	N-CL .002–.004 (0,04–0,10)	—
	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)	—	—	—	—	—
	R/L-CL .002–.003 (0,04–0,08)	R/L-CL .002–.003 (0,04–0,08)	—	R/L-CL .002–.004 (0,04–0,10)	R/L-CL .002–.003 (0,04–0,08)	—

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

machining condition		workpiece material					
		P	M	K	N	S	H
Beyond™	high-performance, optimum conditions, higher speeds	KT315 120–190 (395–625)	KT315 70–170 (230–560)	KCU25/KC5025 80–170 (265–560)	KT315 180–400 (600–1300)	KCU25/KC5025 30–100 (100–325)	—
	first choice for general machining conditions	KCU25/KC5025 80–170 (265–560)	KCU25/KC5025 80–150 (265–500)	KCU25/KC5025 70–150 (230–500)	KCU25/KC5025 150–300 (500–980)	KCU25/KC5025 25–75 (80–250)	CBN available upon request
	unfavorable conditions, interrupted cuts, low speeds	KCU25/KC5025 60–100 (200–325)	KMF 40–80 (135–265)	KMF 25–80 (80–265)	KMF 60–180 (200–600)	KMF 30–25 (30–80)	—

Step 5 • 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 diameter .....1.02" (27mm)
Depth of cut ..... .157" (4mm)

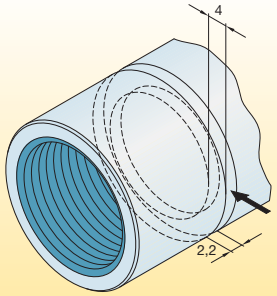
Recommendation

Insert A2022R10CF00
Grade KC5025
Cutting width..... .087" (2,2mm)
Insert seat size 2

Toolholder A2BNSN3202
Seat size 2

Congratulations!

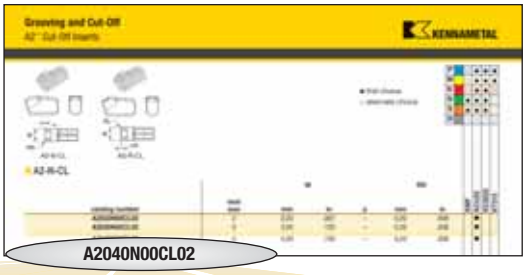
You have successfully maximized cut-off productivity by selecting the best insert, toolholder, grade, and cutting specifications for your application!



Speed: 460 SFM (140 m/min)
Feed: .002 in/rev (0,05 mm/rev)

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A2
Insert Type

A2 = Cut-Off

040
Cutting Width

(in 1/10mm)

cutting width (mm)	pocket seat size
1,40	1B
1,60	01
2,20	02
3,05	03
4,05	04
5,05	05
6,05	06
8,05	08

N
Hand of Insert

N = Neutral
R = Right hand
L = Left hand

00
Approach Angle of Main Cutting Edge

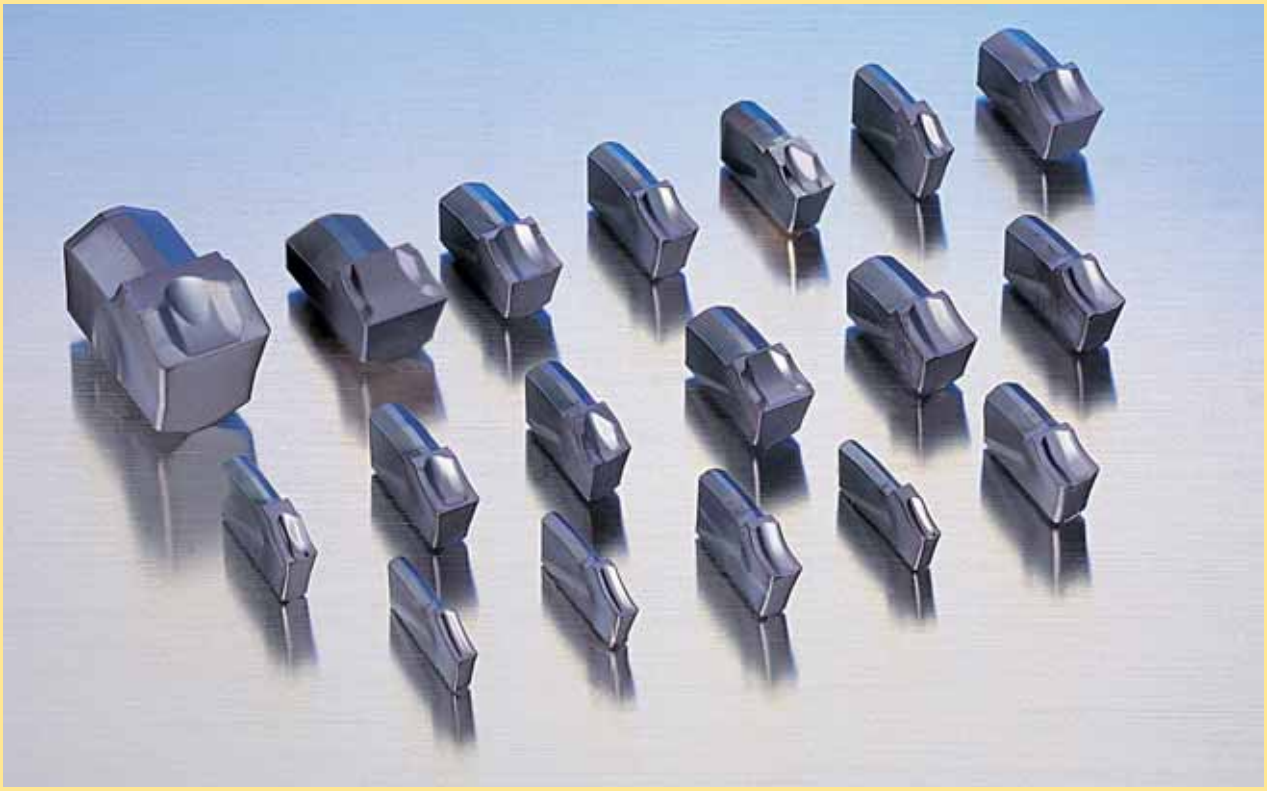
00 = Neutral
06 = 6°
10 = 10°
15 = 15°
16 = 16°

CL
Chipbreaker

-CF
(**Cut-Off F**ine)
-CM
(**Cut-Off M**edium)
-CR
(**Cut-Off R**ough)
-CL
(**Cut-Off L**ow Feed)

02
Corner Radius

	mm	inch
00	0,0	.000
01	0,1	.004/.006
02	0,2	.008
03	0,3	.010
04	0,4	.016



With more than 140 insert line items in four grades and four chipbreaker styles, Kennametal offers a complete line of inserts designed to productively handle any cut-off application.

TG&C • The Latest Metalcutting Innovations

Our latest metalcutting innovations are designed to deliver higher productivity, longer tool life, and increased application versatility.

A2™ — Cut-Off

- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Fixed insert stop ensures solid seating with every index and delivers up to 30% longer life.

A3™ — Deep Grooving

- Designed for deep grooving.
- Reach deeper depths while maintaining chip control and tool rigidity.

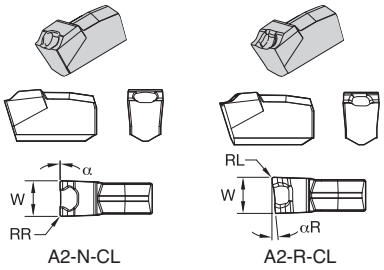
A4™ — Groove and Turn

- One tool for turning, facing, grooving, face-grooving, and cut-off in O.D. and I.D. applications — that means exceptionally fast cycle times, no turret indexes!
- Precise insert positioning is ensured — for accurate cuts!

Top Notch™

- Rigid clamping securely locks insert in place through the toughest cuts.
- Chip control inserts provide excellent chip evacuation in grooving and offer better chip control in multi-directional turning.





A2-N-CL A2-R-CL

● first choice
○ alternate choice

P		○	●	●	●		
M		○	●	●	●		
K		○	●	●	○		
N		●	●	●			
S		●	●	●			
H							

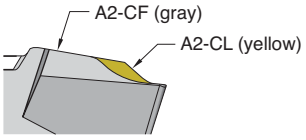
A2-N-CL

catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2022N00CL02	2	2,20	.087	–	0,20	.008		●		
A2030N00CL02	3	3,05	.120	–	0,20	.008		●		
A2040N00CL02	4	4,05	.159	–	0,20	.008		●		

A2-R-CL

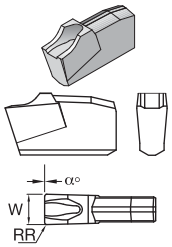
catalog number	seat size	W mm	W in	αR	RL mm	RL in				
right hand										
A2016R16CL01	1	1,60	.063	16	0,15	.006		●		
A2022R06CL02	2	2,20	.087	6	0,20	.008		●		
A2030R06CL02	3	3,05	.120	6	0,20	.008		●		
A2040R06CL02	4	4,05	.159	6	0,20	.008		●		



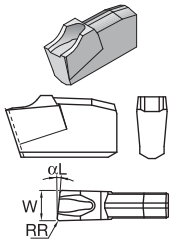


Tolerance on "W" Dimension

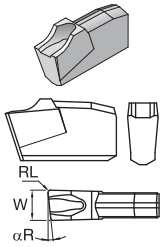
metric width	metric tolerance	inch width	inch tolerance
1,4	+0,05/-0,05	.055	+.002/-.002
1,6	+0,07/-0,07	.063	+.000/-.004
2,2	+0,15/-0,00	.087	+.006/-.000
3,0	+0,15/-0,00	.118	+.006/-.000
4,0	+0,15/-0,00	.157	+.006/-.000
5,0	+0,25/-0,00	.197	+.010/-.000
6,0	+0,25/-0,00	.236	+.010/-.000
8,0	+0,15/-0,00	.315	+.010/-.000



A2-N-CF



A2-L-CF



A2-R-CF

● first choice
○ alternate choice

P	○	●	●	●		
M	○	●	●	●		
K	○	●	●	○		
N	●	●	●			
S	●	●	●			
H						

A2-N-CF

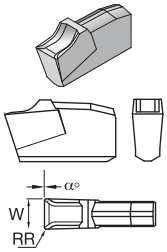
catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2014N00CF01	1B	1,40	.055	–	0,15	.006		●	●	
A2016N00CF00	1	1,55	.061	–	–	–		●	●	
A2016N00CF01	1	1,60	.063	–	0,15	.006	●	●	●	●
A2022N00CF00	2	2,20	.087	–	–	–		●	●	
A2022N00CF02	2	2,20	.087	–	0,20	.008	●	●	●	●
A2030N00CF02	3	3,00	.118	–	0,20	.008	●	●	●	●
A2030N00CF00	3	3,10	.122	–	–	–		●	●	
A2040N00CF02	4	4,00	.157	–	0,20	.008	●	●	●	●
A2040N00CF00	4	4,05	.159	–	–	–		●	●	
A2050N00CF03	5	5,00	.197	–	0,30	.012	●	●	●	

A2-L-CF

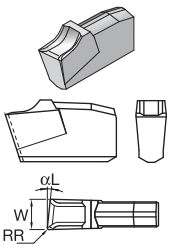
catalog number	seat size	W mm	W in	αL	RR mm	RR in				
left hand										
A2014L06CF01	1B	1,40	.055	6	0,15	.006		●	●	
A2016L06CF00	1	1,60	.063	6	–	–		●	●	
A2016L10CF00	1	1,60	.063	10	–	–		●	●	
A2016L16CF00	1	1,60	.063	16	–	–		●	●	
A2022L06CF02	2	2,20	.087	6	0,20	.008		●	●	
A2022L10CF00	2	2,20	.087	10	–	–		●	●	
A2022L16CF00	2	2,20	.087	16	–	–		●	●	
A2030L06CF02	3	3,00	.118	6	0,20	.008	●	●	●	●
A2030L10CF00	3	3,00	.118	10	–	–		●	●	
A2030L15CF00	3	3,00	.118	15	–	–		●	●	
A2040L06CF02	4	4,00	.157	6	0,20	.008		●	●	
A2050L06CF03	5	5,00	.197	6	0,30	.012		●	●	

A2-R-CF

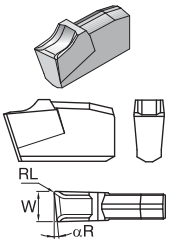
catalog number	seat size	W mm	W in	αR	RL mm	RL in				
right hand										
A2014R06CF01	1B	1,40	.055	6	0,15	.006		●	●	
A2016R06CF00	1	1,60	.063	6	–	–	●	●	●	
A2016R10CF00	1	1,60	.063	10	–	–		●	●	
A2016R16CF00	1	1,60	.063	16	–	–		●	●	
A2022R06CF02	2	2,20	.087	6	0,20	.008	●	●	●	●
A2022R10CF00	2	2,20	.087	10	–	–		●	●	
A2022R16CF00	2	2,20	.087	16	–	–		●	●	
A2030R06CF02	3	3,00	.118	6	0,20	.008	●	●	●	●
A2030R10CF00	3	3,00	.118	10	–	–		●	●	
A2030R15CF00	3	3,00	.118	15	–	–		●	●	
A2040R06CF02	4	4,00	.157	6	0,20	.008		●	●	
A2050R06CF03	5	5,00	.197	6	0,30	.012		●	●	



A2-N-CM



A2-L-CM



A2-R-CM

● first choice
○ alternate choice

P	○	●	●	●	
M	○	●	●	●	
K	○	●	●	○	
N	●	●	●		
S	●	●	●		
H					

A2-N-CM

catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2014N00CM01	1B	1,40	.055	–	0,15	.006		●	●	
A2016N00CM01	1	1,60	.063	–	0,10	.004		●	●	●
A2022N00CM02	2	2,20	.087	–	0,20	.008		●	●	
A2030N00CM02	3	3,00	.118	–	0,20	.008		●	●	
A2040N00CM02	4	4,00	.157	–	0,20	.008		●	●	
A2050N00CM03	5	5,00	.197	–	0,30	.012		●	●	
A2060N00CM03	6	6,00	.236	–	0,30	.012		●	●	
A2080N00CM04	8	8,00	.315	–	0,40	.016		●	●	

A2-L-CM

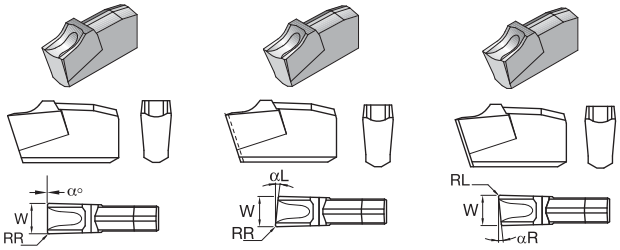
catalog number	seat size	W mm	W in	αL	RR mm	RR in	KMF	KCU25	KC5025	KT315
left hand										
A2016L06CM00	1	1,60	.063	6	–	–		●	●	
A2016L16CM00	1	1,60	.063	16	–	–		●	●	
A2022L06CM00	2	2,20	.087	6	–	–		●	●	
A2030L06CM01	3	3,00	.118	6	0,10	.004		●	●	

A2-R-CM

catalog number	seat size	W mm	W in	αR	RL mm	RL in	KMF	KCU25	KC5025	KT315
right hand										
A2016R06CM00	1	1,60	.063	6	–	–		●	●	
A2016R16CM00	1	1,60	.063	16	–	–		●	●	
A2022R06CM00	2	2,20	.087	6	–	–		●	●	
A2030R06CM01	3	3,00	.118	6	0,10	.004		●	●	

Tolerance on "W" Dimension

metric width	metric tolerance	inch width	inch tolerance
1,4	+0,05/-0,05	.055	+.002/-.002
1,6	+0,07/-0,07	.063	+.000/-.004
2,2	+0,15/-0,00	.087	+.006/-.000
3,0	+0,15/-0,00	.118	+.006/-.000
4,0	+0,15/-0,00	.157	+.006/-.000
5,0	+0,25/-0,00	.197	+.010/-.000
6,0	+0,25/-0,00	.236	+.010/-.000
8,0	+0,15/-0,00	.315	+.010/-.000



A2-N-CR A2-L-CR A2-R-CR

● first choice
○ alternate choice

		KMF	KCU25	KC5025	KT315
P		○	●	●	●
M		○	●	●	●
K		○	●	●	○
N		●	●	●	
S		●	●	●	
H					

A2-N-CR

catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2022N00CR02	2	2,20	.087	–	0,20	.008		●	●	●
A2030N00CR02	3	3,00	.118	–	0,20	.008		●	●	●
A2040N00CR02	4	4,00	.157	–	0,20	.008		●	●	●
A2050N00CR03	5	5,00	.197	–	0,30	.012		●	●	
A2060N00CR03	6	6,00	.236	–	0,30	.012		●	●	
A2080N00CR04	8	8,00	.315	–	0,40	.016		●	●	

A2-L-CR

catalog number	seat size	W mm	W in	αL	RR mm	RR in	KMF	KCU25	KC5025	KT315
left hand										
A2022L06CR03	2	2,20	.087	6	0,30	.012		●	●	
A2030L06CR03	3	3,00	.118	6	0,30	.012		●	●	
A2040L06CR03	4	4,00	.157	6	0,30	.012		●	●	
A2050L06CR04	5	5,00	.197	6	0,40	.016		●	●	

A2-R-CR

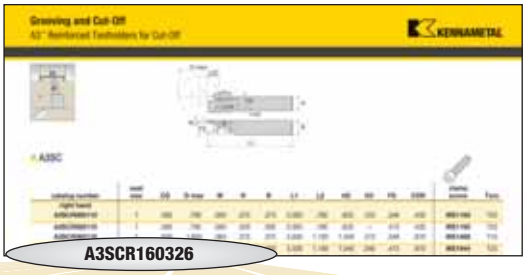
catalog number	seat size	W mm	W in	αR	RL mm	RL in	KMF	KCU25	KC5025	KT315
right hand										
A2022R06CR03	2	2,20	.087	6	0,30	.012		●	●	
A2030R06CR03	3	3,00	.118	6	0,30	.012		●	●	
A2040R06CR03	4	4,00	.157	6	0,30	.012		●	●	
A2050R06CR04	5	5,00	.197	6	0,40	.016		●	●	
A2060R06CR04	6	6,00	.236	6	0,40	.016		●	●	

Tolerance on "W" Dimension

metric width	metric tolerance	inch width	inch tolerance
1,4	+0,05/-0,05	.055	+.002/-.002
1,6	+0,07/-0,07	.063	+.000/-.004
2,2	+0,15/-0,00	.087	+.006/-.000
3,0	+0,15/-0,00	.118	+.006/-.000
4,0	+0,15/-0,00	.157	+.006/-.000
5,0	+0,25/-0,00	.197	+.010/-.000
6,0	+0,25/-0,00	.236	+.010/-.000
8,0	+0,15/-0,00	.315	+.010/-.000

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A3	S	C	R	16	03	26
A3 Screw-Clamp Holder*	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max Cutting Depth

S = Straight

R = Right
L = Left

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

in millimeters

*NOTE:
A3™ screw-clamp O.D. holders are also designed to hold A2 inserts (see Technical Information, page D25)

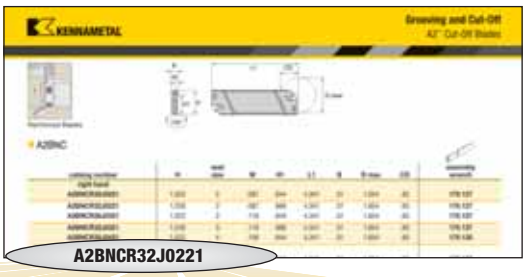
S = Standard (straight clearance)
M = Max support (straight clearance)
C = Reinforced max support (circular clearance)

metric:
Height x width in mm, letter indicates tool length according to ISO (see table in tool block identification system on next page)

inch:
For square shanks, the number indicates the height and width in 1/16" increments (rectangular:
2nd digit = height in 1/4" increments)

How Do Catalog Numbers Work?

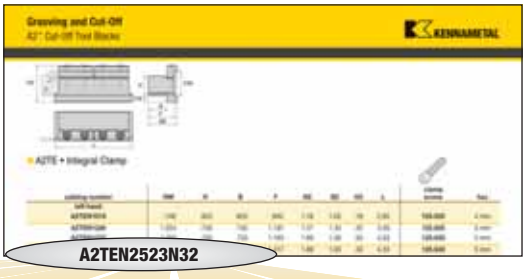
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A2BNCR32J0221

Cut-Off • Blades

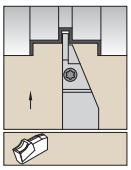
A2	BN	C	R	32	J	02	21
A2 Cut-Off Blade	Tool Style	Support Style	Hand of Tool	Blade Size	Overall Length	Seat Size	Max Cutting Depth
	BN = 2 pocket blade **BH** = 1 pocket blade	**S** = Standard **C** = Reinforced	**R** = Right **L** = Left **N** = Neutral	in (mm) 19/26/32/52	Letter designation according to ISO (see table in tool block identification system below) **G** = 90mm **J** = 110mm **M** = 150mm **X** = Special	**1B** = 1,40mm **01** = 1,60mm **02** = 2,20mm **03** = 3,05mm **04** = 4,05mm **05** = 5,05mm **06** = 6,05mm **08** = 8,05mm	in (mm) (reinforced blade only)

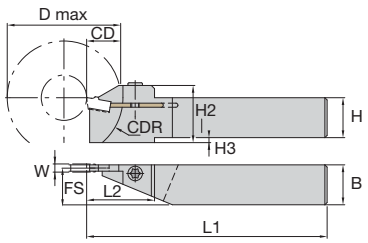


A2TEN2523N32

Cut-Off • Tool Blocks

A2	T	E	N	25	23	N	32
A2 Cut-Off	Tool Block	Clamping Style	Hand of Tool	Shank Height	Shank Width	Tool Length in (mm)	Blade Size
		E = Integral clamp **Z** = Removable clamp	**R** = Right **L** = Left **N** = Neutral	in millimeters	in millimeters	**J** = 110 **X** = Other length	in millimeters





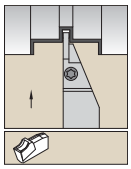
A3SC

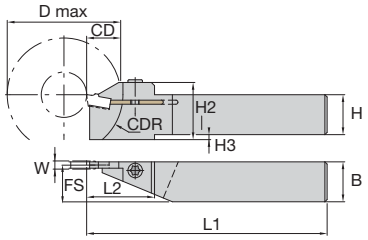


catalog number	seat size	CD	D max	W	H	B	L1	L2	H2	H3	FS	CDR	clamp screw	Torx
right hand														
A3SCR060110	1	.390	.790	.063	.375	.375	5.000	.790	.620	.125	.348	.430	**MS1160**	T20
A3SCR080110	1	.390	.790	.063	.500	.500	5.000	.790	.620	—	.473	.430	**MS1160**	T20
A3SCR060116	1	.630	1.650	.063	.375	.375	3.500	1.100	1.040	.412	.348	.870	**MS1488**	T15
A3SCR080116	1	.630	1.650	.063	.500	.500	3.500	1.180	1.040	.290	.473	.870	**MS1944**	T25
A3SCR100116	1	.630	1.650	.063	.625	.625	4.500	1.180	1.040	.160	.599	.870	**MS1944**	T25
A3SCR120116	1	.630	1.650	.063	.750	.750	4.500	1.180	1.040	—	.723	.870	**MS1944**	T25
A3SCR060210	2	.390	.790	.087	.375	.375	5.000	.790	.620	.125	.340	.430	**MS1160**	T20
A3SCR080210	2	.390	.790	.087	.500	.500	5.000	.790	.620	—	.465	.430	**MS1160**	T20
A3SCR080216	2	.630	1.650	.087	.500	.500	3.500	1.140	1.040	.290	.465	.870	**MS1944**	T25
A3SCR100216	2	.630	1.650	.087	.625	.625	4.500	1.180	1.040	.160	.590	.870	**MS1944**	T25
A3SCR120216	2	.630	1.650	.087	.750	.750	4.500	1.180	1.040	—	.715	.870	**MS1944**	T25
A3SCR060310	3	.390	.790	.118	.375	.375	5.000	.790	.600	.125	.328	.430	**MS1160**	T20
A3SCR080310	3	.390	.790	.118	.500	.500	5.000	.790	.600	—	.453	.430	**MS1160**	T20
A3SCR080316	3	.630	2.050	.118	.500	.500	3.500	1.140	1.040	.290	.453	1.060	**MS1944**	T25
A3SCR100316	3	.630	2.050	.118	.625	.625	4.500	1.180	1.040	.160	.578	1.060	**MS1944**	T25
A3SCR120316	3	.630	2.050	.118	.750	.750	4.500	1.180	1.040	—	.703	1.060	**MS1944**	T25
A3SCR120326	3	1.020	2.440	.118	.750	.750	4.500	1.670	1.040	—	.703	1.260	**MS1595**	T30
A3SCR160316	3	.630	2.440	.118	1.000	1.000	6.000	1.180	1.240	—	.953	1.260	**MS1944**	T25
A3SCR160326	3	1.020	2.440	.118	1.000	1.000	6.000	1.670	1.260	—	.953	1.260	**MS1595**	T30
A3SCR200332	3	1.260	2.440	.118	1.250	1.250	6.000	1.970	1.670	.160	1.203	1.260	**MS1595**	T30
A3SCR100416	4	.630	2.050	.158	.625	.625	4.500	1.180	1.040	.160	.558	1.060	**MS1944**	T25
A3SCR120416	4	.630	2.050	.158	.750	.750	4.500	1.180	1.040	—	.683	1.060	**MS1944**	T25
A3SCR120426	4	1.020	2.440	.158	.750	.750	4.500	1.670	1.040	—	.683	1.260	**MS1595**	T30
A3SCR160416	4	.630	2.440	.158	1.000	1.000	6.000	1.180	1.240	—	.933	1.260	**MS1944**	T25
A3SCR160426	4	1.020	2.440	.158	1.000	1.000	6.000	1.670	1.260	—	.933	1.260	**MS1595**	T30
A3SCR200432	4	1.260	2.440	.158	1.250	1.250	6.000	1.970	1.670	.160	1.183	1.260	**MS1595**	T30

(continued)

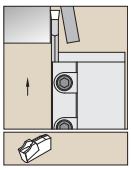
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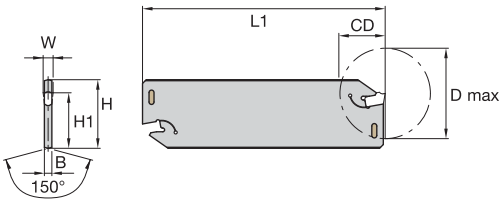






catalog number	seat size	CD	D max	W	H	B	L1	L2	H2	H3	FS	CDR	clamp screw	Torx
left hand														
A3SCL060110	1	.390	.790	.063	.375	.375	5.000	.790	.620	.125	.348	.430	**MS1160**	T20
A3SCL080110	1	.390	.790	.063	.500	.500	5.000	.790	.620	—	.473	.430	**MS1160**	T20
A3SCL060116	1	.630	1.650	.063	.375	.375	3.500	1.100	1.040	.412	.348	.870	**MS1488**	T15
A3SCL080116	1	.630	1.650	.063	.500	.500	3.500	1.180	1.040	.290	.473	.870	**MS1944**	T25
A3SCL100116	1	.630	1.650	.063	.625	.625	4.500	1.180	1.040	.160	.599	.870	**MS1944**	T25
A3SCL120116	1	.630	1.650	.063	.750	.750	4.500	1.180	1.040	—	.723	.870	**MS1944**	T25
A3SCL060210	2	.390	.790	.087	.375	.375	5.000	.790	.620	.125	.340	.430	**MS1160**	T20
A3SCL080210	2	.390	.790	.087	.500	.500	5.000	.790	.620	—	.465	.430	**MS1160**	T20
A3SCL080216	2	.630	1.650	.087	.500	.500	3.500	1.140	1.040	.290	.465	.870	**MS1944**	T25
A3SCL100216	2	.630	1.650	.087	.625	.625	4.500	1.180	1.040	.160	.590	.870	**MS1944**	T25
A3SCL120216	2	.630	1.650	.087	.750	.750	4.500	1.180	1.040	—	.715	.870	**MS1944**	T25
A3SCL060310	3	.390	.790	.118	.375	.375	5.000	.790	.600	.125	.328	.430	**MS1160**	T20
A3SCL080310	3	.390	.790	.118	.500	.500	5.000	.790	.600	—	.453	.430	**MS1160**	T20
A3SCL080316	3	.630	2.050	.118	.500	.500	3.500	1.140	1.040	.290	.453	1.060	**MS1944**	T25
A3SCL100316	3	.630	2.050	.118	.625	.625	4.500	1.180	1.040	.160	.578	1.060	**MS1944**	T25
A3SCL120316	3	.630	2.050	.118	.750	.750	4.500	1.180	1.040	—	.703	1.060	**MS1944**	T25
A3SCL120326	3	1.020	2.440	.118	.750	.750	4.500	1.670	1.040	—	.703	1.260	**MS1595**	T30
A3SCL160316	3	.630	2.440	.118	1.000	1.000	6.000	1.180	1.240	—	.953	1.260	**MS1944**	T25
A3SCL160326	3	1.020	2.440	.118	1.000	1.000	6.000	1.670	1.260	—	.953	1.260	**MS1595**	T30
A3SCL200332	3	1.260	2.440	.118	1.250	1.250	6.000	1.970	1.670	.160	1.203	1.260	**MS1595**	T30
A3SCL120426	4	1.020	2.440	.158	.750	.750	4.500	1.670	1.040	—	.683	1.260	**MS1595**	T30
A3SCL160416	4	.630	2.440	.158	1.000	1.000	6.000	1.180	1.240	—	.933	1.260	**MS1944**	T25
A3SCL160426	4	1.020	2.440	.158	1.000	1.000	6.000	1.670	1.260	—	.933	1.260	**MS1595**	T30
A3SCL200432	4	1.260	2.440	.158	1.250	1.250	6.000	1.970	1.670	.160	1.183	1.260	**MS1595**	T30

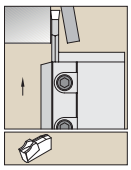


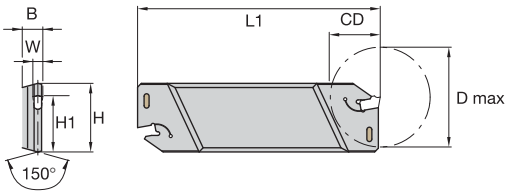


A2BNSN

catalog number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
A2BNSN19X1B13	.748	1B	.055	.608	3.396	.07	1.063	.53	**170.137**
A2BNSN26G1B15	1.024	1B	.055	.845	3.553	.07	1.181	.59	**170.137**
A2BNSN26J1B15	1.024	1B	.055	.845	4.341	.07	1.181	.59	**170.137**
A2BNSN32M1B15	1.260	1B	.055	.986	5.915	.09	1.181	.59	**170.137**
A2BNSN19X0116	.748	1	.063	.608	3.396	.07	1.181	.63	**170.137**
A2BNSN26J0117	1.024	1	.063	.844	4.341	.07	1.339	.67	**170.137**
A2BNSN32M0119	1.260	1	.063	.986	5.915	.09	1.496	.75	**170.137**
A2BNSN19X02	.748	2	.087	.608	3.396	.07	—	.79	**170.137**
A2BNSN26J02	1.024	2	.087	.845	4.339	.08	—	.98	**170.137**
A2BNSN26G02	1.024	2	.087	.845	3.551	.07	—	.98	**170.137**
A2BNSN26M02	1.024	2	.087	.845	5.913	.07	—	.98	**170.137**
A2BNSN32M02	1.260	2	.087	.986	5.913	.07	—	2.36	**170.137**
A2BNSN26J03	1.024	3	.118	.845	4.339	.09	—	1.57	**170.137**
A2BNSN26G03	1.024	3	.118	.845	3.551	.09	—	1.57	**170.137**
A2BNSN26M03	1.024	3	.118	.845	5.913	.09	—	1.57	**170.137**
A2BNSN32H03	1.260	3	.118	.986	4.339	.09	—	1.97	**170.137**
A2BNSN32M03	1.260	3	.118	.986	5.915	.09	—	1.97	**170.137**
A2BNSN26J04	1.024	4	.158	.844	4.341	.13	—	1.57	**170.137**
A2BNSN32M04	1.260	4	.158	.986	5.915	.13	—	1.97	**170.137**
A2BNSN26J05	1.024	5	.197	.843	4.331	.17	—	1.57	**170.130**
A2BNSN32M05	1.260	5	.197	.984	5.906	.17	—	2.36	**170.130**
A2BNSN26J06	1.024	6	.236	.843	4.331	.21	—	1.57	**170.130**
A2BNSN32M06	1.260	6	.236	.984	5.906	.21	—	2.36	**170.130**
A2BNSN52X08	2.047	8	.315	1.780	10.236	.28	—	4.72	**170.132**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
170.130 is designed for the larger cutting widths size 4–6. It has two small pins on one side — these are designed to remove the insert only.
On the opposite side, there is a large pin and a rotating tang — these are designed to assemble the insert into the pocket.
The large pin and tang are a better design for assembling the larger inserts because the smaller insertion pins will bend or break if used repeatedly for assembly.
170.137 is designed for the smaller widths below 4mm. It has only the two small pins that are used for both assembly and removal.
When using the smallest 1,4mm and 1,6mm cut-off blades, please note that the wrench can only be used to remove the insert.
The insert must be installed by tapping the edge of the insert with a plastic hammer.

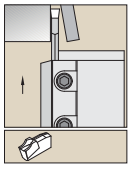

Reinforced Blades

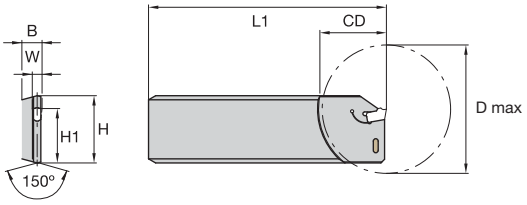


A2BNC

catalog number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BNCR26J0221	1.023	2	.087	.844	4.341	.31	1.654	.83	**170.137**
A2BNCR32J0221	1.259	2	.087	.986	4.341	.31	1.654	.83	**170.137**
A2BNCR26J0321	1.022	3	.118	.844	4.341	.31	1.654	.83	**170.137**
A2BNCR32J0321	1.259	3	.118	.986	4.341	.31	1.654	.83	**170.137**
A2BNCR26J0421	1.022	4	.158	.844	4.341	.31	1.654	.83	**170.130**
left hand									
A2BNCL26J0221	1.020	2	.087	.844	4.341	.31	1.654	.83	**170.137**
A2BNCL32J0221	1.260	2	.087	.986	4.341	.31	1.654	.83	**170.137**
A2BNCL26J0321	1.020	3	.118	.844	4.341	.31	1.654	.83	**170.137**
A2BNCL32J0321	1.260	3	.118	.986	4.341	.31	1.654	.83	**170.137**
A2BNCL26J0421	1.020	4	.158	.844	4.341	.31	1.654	.83	**170.130**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
170.130 is designed for the larger cutting widths size 4–6. It has two small pins on one side — these are designed to remove the insert only.
On the opposite side, there is a large pin and a rotating tang — these are designed to assemble the insert into the pocket.
The large pin and tang are a better design for assembling the larger inserts because the smaller insertion pins will bend or break if used repeatedly for assembly.
170.137 is designed for the smaller widths below 4mm. It has only the two small pins that are used for both assembly and removal.
When using the smallest 1,4mm and 1,6mm cut-off blades, please note that the wrench can only be used to remove the insert.
The insert must be installed by tapping the edge of the insert with a plastic hammer.

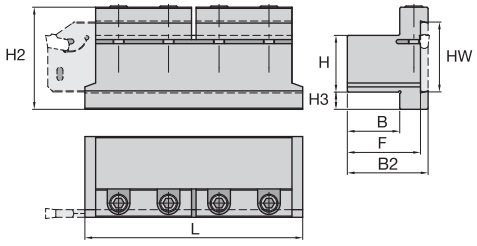

Reinforced Blades



A2BHC

catalog number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BHCR32K0333	1.260	3	.118	.986	4.931	.31	2.598	1.30	**170.137**
A2BHCR32K0433	1.260	4	.158	.986	4.931	.31	2.598	1.30	**170.137**
left hand									
A2BHCL32K0333	1.260	3	.118	.986	4.931	.31	2.598	1.30	**170.137**
A2BHCL32K0433	1.260	4	.158	.986	4.931	.31	2.598	1.30	**170.137**

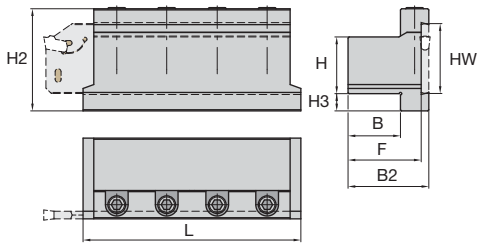
NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
170.130 is designed for the larger cutting widths size 4–6. It has two small pins on one side — these are designed to remove the insert only.
On the opposite side, there is a large pin and a rotating tang — these are designed to assemble the insert into the pocket.
The large pin and tang are a better design for assembling the larger inserts because the smaller insertion pins will bend or break if used repeatedly for assembly.
170.137 is designed for the smaller widths below 4mm. It has only the two small pins that are used for both assembly and removal.
When using the smallest 1,4mm and 1,6mm cut-off blades, please note that the wrench can only be used to remove the insert.
The insert must be installed by tapping the edge of the insert with a plastic hammer.



A2TE • Integral Clamp



catalog number	HW	H	B	F	H2	B2	H3	L	clamp screw	hex
left hand										
A2TEN1019	.748	.625	.625	.945	1.18	1.02	.16	2.95	**125.525**	4 mm
A2TEN1226	1.024	.750	.750	1.161	1.57	1.34	.32	3.39	**125.625**	5 mm
A2TEN1232	1.260	.750	.750	1.163	1.89	1.38	.55	4.33	**125.630**	5 mm
A2TEN1632	1.260	1.000	1.000	1.417	1.89	1.63	.30	4.33	**125.630**	5 mm
A2TEN2032	1.260	1.250	1.250	1.673	1.97	1.89	.13	4.33	**125.630**	5 mm
A2TEN2432	1.260	1.500	1.500	1.913	2.25	2.13	.16	4.33	**125.630**	5 mm
A2TEN2452	2.067	1.500	1.500	2.008	3.15	2.32	.83	5.32	**125.835**	6 mm



A2TZ • Removable Clamp





catalog number	HW	H	B	F	H2	B2	H3	L	clamp	clamp screw	hex
left hand											
A2TZN1226	1.024	.750	.750	1.201	1.63	1.38	.32	3.39	**168.682**	**125.616**	5 mm
A2TZN1626	1.024	1.000	1.000	1.457	1.88	1.63	.32	3.39	**168.682**	**125.616**	5 mm
A2TZN2026	1.024	1.250	1.250	1.713	1.93	1.89	.12	3.39	**168.682**	**125.616**	5 mm
A2TZN1632	1.260	1.000	1.000	1.417	1.87	1.63	.30	4.33	**168.936**	**125.616**	5 mm
A2TZN2032	1.260	1.250	1.250	1.673	1.95	1.89	.13	4.33	**168.936**	**125.616**	5 mm

Definitions and Guidelines

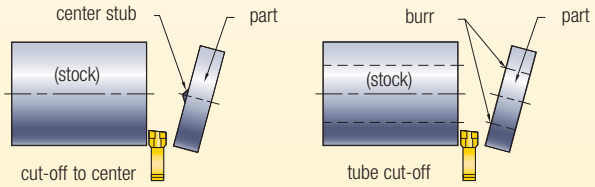
1. Width of cut (W) = width of the insert.

2. Lead angle = 0° (neutral); 4°, 5°, 12°, 18° (RH or LH).

Reduce burr of cut-off faces:

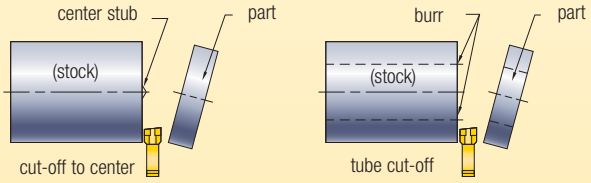
- Use lead angle-type inserts (Figures 1 and 2). Lead angle on a cut-off insert reduces the burr that remains on the part but decreases tool life and increases tool-side deflection and possibly cycle time.

Figure 1
Insert selection **left-hand lead**



Left-hand lead insert leaves center stub or burr on part and produces clean stock surface.

Figure 2
Insert selection **right-hand lead**

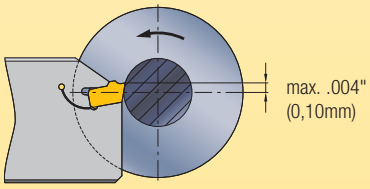


Right-hand lead insert leaves center stub or burr on stock and produces clean part surface.

- Check total height and maintain on center with part diameter.

- The cutting edge height should be within ±.004" (±0,1mm) to the center; recommended cutting position is .002" (0,05mm) above center.

Figure 3
Above center



- If 0° lead angle is mandatory, use the narrowest possible cut-off insert and blade. This will minimise the center stub or cut-off burr length. Decrease the feed rate to maximum .002" (0,05mm) 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 catcher for the part.

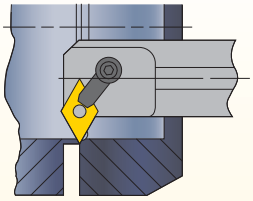


Figure 4
Internal chamfer line up

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 the correct angle.

- Use blades with the greatest possible face height and smallest possible cutting width.

- Increase the speed.

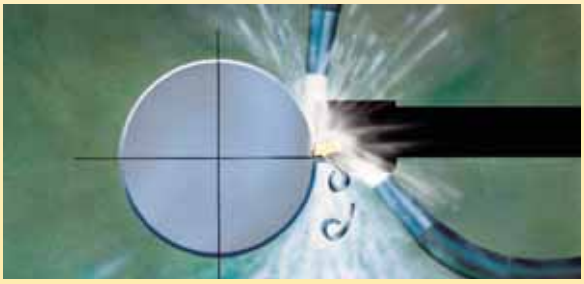


Figure 5
Preferred method for applying coolant

- Mount cut-off tool upside down. This enables gravity to remove chips and avoid cutting the chips twice. Another benefit of 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.



A3™ Deep Grooving Is the Best Choice for High Productivity — with Outstanding Application Flexibility!

Primary Application

The A3 System is designed specifically for deep grooving operations. The A3 platform enables customers to reach deeper depths while maintaining chip control and tool rigidity.

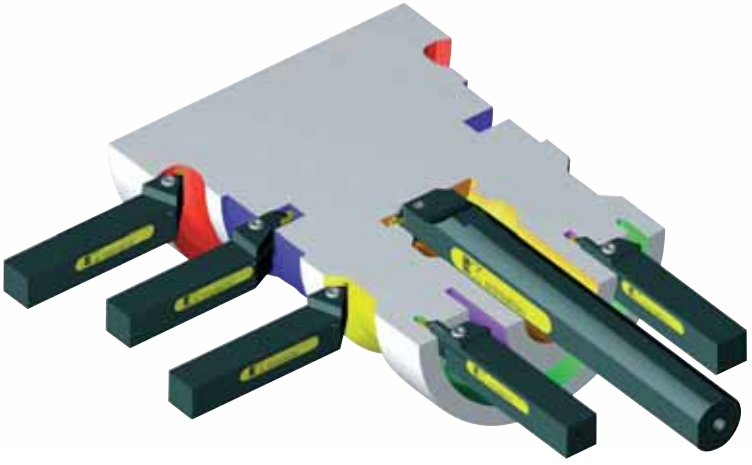
Features and Benefits

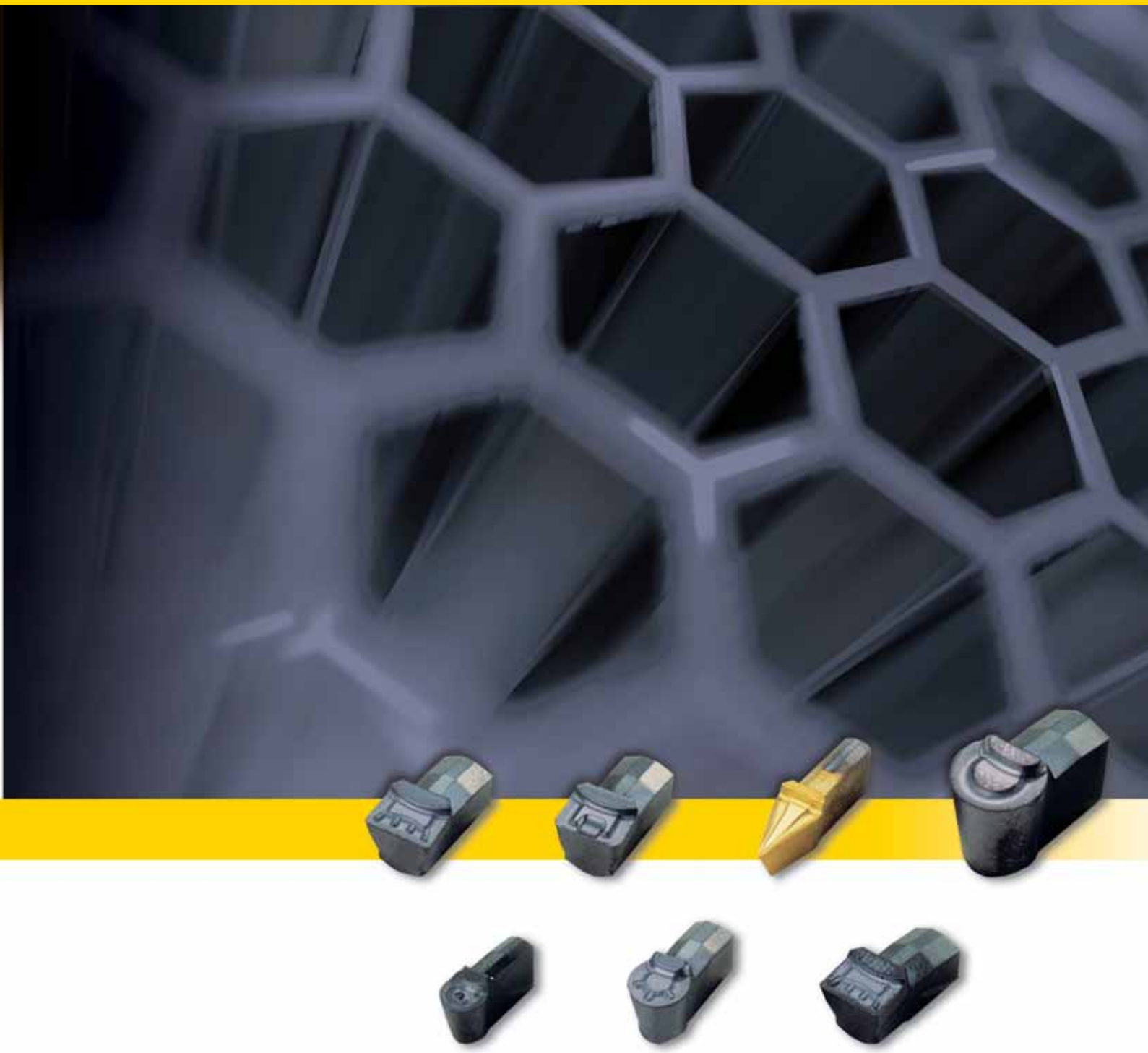
Performance

- One insert performs:
  - O.D. operations
  - I.D. operations
  - Face grooving operations
- In addition, the A3 system's performance is enhanced by:
  - Beyond™ CVD grades
  - The Beyond Tooling Selection System

Compatibility

- A3 deep grooving tooling is compatible with square shank, KM™, and Kennametal Capto® platforms.





Step 1 • Select system based on the groove depth required

What you need to know:

- Groove depth, width, and profile.
- Material to be machined.
- Application to be performed (face, O.D., or I.D. grooving).
- Toolholder requirements (e.g., KM™, square shank, right/left).

Top Notch™



Grooving
For grooving depth ≤1.5x grooving width, see Top Notch grooving, page D122.

A3™ or A4™



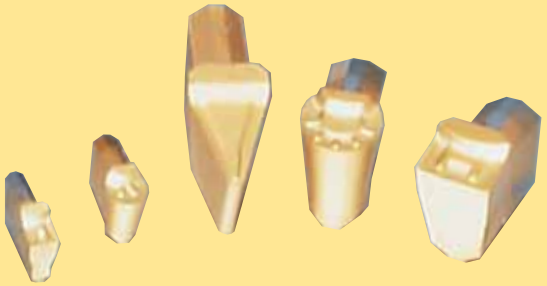
Deep Grooving
For grooving depth ≥1.5x grooving width, proceed to Step 2 for the A3 Deep Grooving program or see A4 Grooving and Turning program on page D70.

A3 Deep Grooving for Deep Internal, External, and Face Grooving Applications

System Capabilities

groove	min	max
width	.087" (2,25mm)	.397" (10,05mm)
depth	—	1.260" (32mm)

Face grooving diameter range .984" (25mm) to ∞



Step 2 • Select toolholder based on the application

NOTE: Toolholders are available as conventional square shank versions as well as quick-change versions. Please select equal seat sizes for the insert and the toolholder.

I.D. grooving applications.....see page D44
Face grooving with integral square shank toolholders.....see page D38
O.D. grooving with integral square shank toolholders.....see page D34
Face and O.D. grooving with modular toolholders.....see pages D46–D60

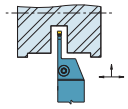
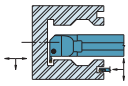
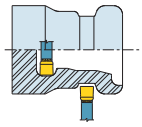
Step 3 • Select chipbreaker style and feed rate

DF — Deep Finishing	DM — Deep Medium	DR — Deep Roughing
		

(continued)

(continued)

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

workpiece material and application	P	M	K	N	S	H
 deep O.D. 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 and I.D. 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 1/3 the insert width.

NOTE: Use minimum feed rates for narrower grooves and heavier feed rates for wider grooves. Increase feed rate as operation allows.

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

machining condition	workpiece material P	M	K	N	S	H
high-performance for optimal conditions (clean cuts, good machine condition, higher speed capability)	**KT315** 100–230 (330–750)	**KT315** 70–170 (230–560)	**KCU10/KC5010** 70–220 (230–720)	**KCU10/KC5010** 180–850 (590–2800)	**KCU10/KC5010** 10–110 (35–360)	**KB5625*** 120–150 (390–500)
	KC9110 110–220 (360–720)	—	—	—	—	—
general purpose (first choice for general machining)	**KCU10/KC5010** 60–160 (200–525)	**KCU10/KC5010** 50–140 (160–450)	**KCU25/KC5025** 70–150 (230–500)	**KCU10/KC5010** 150–730 (500–2400)	**KCU25/KC5025** 10–60 (35–200)	**KB5625*** 80–130 (260–425)
unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed)	**KCU25/KC5025** 50–110 (160–360)	**KCU25/KC5025** 40–90 (130–300)	**KCU25/KC5025** 25–140 (80–450)	**KCU25/KC5025** 60–305 (200–1000)	**KCU25/KC5025** 10–46 (35–150)	**KCU10/KC5010** 10–35 (35–115)
	—	—	—	**KMF** 60–200 (200–650)	**KMF** 10–30 (35–100)	—

*NOTE: PCBN-tipped inserts in KB5625 are available on request.

Step 5 • Select insert and holder from catalog page

NOTE: The insert seat size and cutting width must match the seat size and cutting width of your toolholder selection.

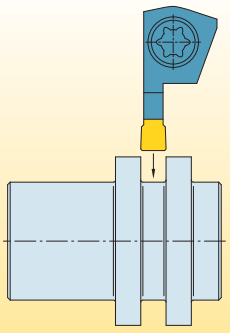
Example for A3 • Deep Grooving
Material.....low-alloyed steel
Groove depth ..... .5" (12mm)
Groove width..... .250" (6,35mm)
Smooth cut

Recommendation
Insert.....A3G250I06P1DF
Grade KC5010
Insert width ..... .250" (6,35mm)
Insert seat size 6

Toolholder.....A3SML2525M0616
Grooving depth..... .630" (16mm)
Seat size 2

Congratulations!

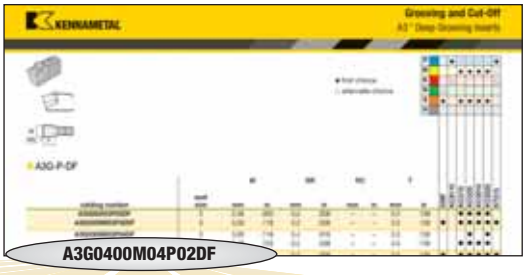
You have successfully maximized your productivity by selecting the best A3 insert geometry, grade, and cutting specifications for your application!



Speed: 570 SFM (180 m/min)
Feed: .008 in/rev (0,15 mm/rev)

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

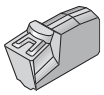


A3	G	0400	M	04	P	02	DF
Type of Program	Insert Style	Groove Width	Units	Insert Size	Insert Tolerance	Corner Radii	Chipbreaker
A3 = Deep Grooving	**G** = Square **R** = Full radius **V** = V-style 35º	Expressed in .001" or 1/100mm 0000 for V shape	**I** = inch **M** = metric	03 (*)3S 04 (*)4S 05 06 08 10	**P** = Precision ground grooving width tolerance: ±.001" (0,025mm) **U** = Utility molded grooving width tolerance: 3,05-4,05: +.006" -0 (+0,15mm) -0 5,05-10,05: +.010" -0 (+0,25mm) -0		**DF** = Deep Finishing **DM** = Deep Medium **DR** = Deep Roughing

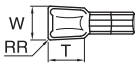
inch	metric
0	01
05 = .008	02
1 = .016	04
2 = .032	08
3 = .047	12
4 = .062	16
full radius = 00	

(*) 3S/4S designates a small size insert for face grooving of small diameters.









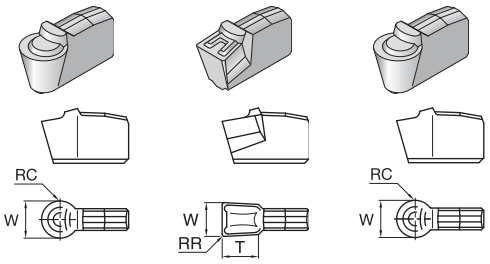
● first choice
○ alternate choice

P	●	○	○	○	○	●	
M		●	●	●	●	○	
K		○				○	
N	○						
S	●		●	●	●	●	
H							

A3G-P-DF

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G093I03P05DF	3	2,36	.093	0,2	.008	–	–	3,5	.138			●	●	●	●	
A3G0300M03P02DF	3	3,00	.118	0,2	.008	–	–	3,5	.138	●		●	●	●	●	●
A3G0300M03P04DF	3	3,00	.118	0,4	.016	–	–	3,5	.138				●		●	
A3G125I03P05DF	3	3,18	.125	0,2	.008	–	–	3,5	.138			●	●	●	●	
A3G125I04P05DF	4	3,18	.125	0,2	.008	–	–	3,5	.138	●		●	●	●	●	●
A3G0400M04P08DF	4	4,00	.157	0,8	.032	–	–	3,5	.138				●		●	
A3G0400M04P02DF	4	4,00	.157	0,2	.008	–	–	3,5	.138	●		●	●	●	●	
A3G0400M04P04DF	4	4,00	.157	0,4	.016	–	–	3,5	.138	●	●	●	●	●	●	●
A3G187I05P05DF	5	4,75	.187	0,2	.008	–	–	4,5	.177			●	●	●	●	
A3G0500M05P04DF	5	5,00	.197	0,4	.016	–	–	4,5	.177	●	●	●	●	●	●	
A3G0500M05P02DF	5	5,00	.197	0,2	.008	–	–	4,5	.177			●	●	●	●	
A3G0500M05P08DF	5	5,00	.197	0,8	.032	–	–	4,5	.177				●		●	
A3G218I06P1DF	6	5,54	.218	0,4	.016	–	–	4,5	.177			●	●	●	●	
A3G218I06P2DF	6	5,54	.218	0,8	.032	–	–	4,5	.177				●	●	●	
A3G0600M06P08DF	6	6,00	.236	0,8	.032	–	–	4,5	.177	●		●	●	●	●	
A3G0600M06P12DF	6	6,00	.236	1,2	.047	–	–	4,5	.177				●		●	
A3G0600M06P04DF	6	6,00	.236	0,4	.016	–	–	4,5	.177	●		●	●	●	●	
A3G250I06P2DF	6	6,35	.250	0,8	.032	–	–	4,5	.177			●	●	●	●	
A3G250I06P1DF	6	6,35	.250	0,4	.016	–	–	4,5	.177			●	●	●	●	
A3G250I08P2DF	8	6,35	.250	0,8	.032	–	–	6,0	.236			●	●	●	●	
A3G250I08P1DF	8	6,35	.250	0,4	.016	–	–	6,0	.236			●	●	●	●	
A3G312I08P1DF	8	7,93	.312	0,4	.016	–	–	6,0	.236			●	●	●	●	
A3G312I08P2DF	8	7,93	.312	0,8	.032	–	–	6,0	.236					●	●	
A3G0800M08P08DF	8	8,00	.315	0,8	.032	–	–	6,0	.236			●	●	●	●	
A3G0800M08P04DF	8	8,00	.315	0,4	.016	–	–	6,0	.236			●	●	●	●	

NOTE: RR=RL



A3R-P-DF A3G-P-DF A3R-P-DF

● first choice
○ alternate choice

P			●	○	○	○	○	●
M				●	●	●	●	○
K			○					○
N		○						
S		●		●	●	●	●	
H								

A3R-P-DF

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R093I03P00DF	3	2,36	.093	–	–	1,2	.047	–	–			●	●	●	●	
A3R0300M03P00DF	3	3,00	.118	–	–	1,5	.059	–	–	●		●	●	●	●	●
A3R125I03P00DF	3	3,18	.125	–	–	1,6	.063	–	–			●	●	●	●	
A3R125I04P00DF	4	3,18	.125	–	–	1,6	.063	–	–	●		●	●	●	●	
A3R0400M04P00DF	4	4,00	.157	–	–	2,0	.079	–	–	●		●	●	●	●	
A3R187I05P00DF	5	4,75	.187	–	–	2,4	.094	–	–			●	●	●	●	
A3R0500M05P00DF	5	5,00	.197	–	–	2,5	.098	–	–			●	●	●	●	
A3R218I06P00DF	6	5,54	.218	–	–	2,8	.109	–	–			●	●	●	●	
A3R0600M06P00DF	6	6,00	.236	–	–	3,0	.118	–	–	●		●	●	●	●	
A3R250I06P00DF	6	6,35	.250	–	–	3,2	.125	–	–			●	●	●	●	
A3R250I08P00DF	8	6,35	.250	–	–	3,2	.125	–	–			●	●	●	●	
A3R312I08P00DF	8	7,93	.312	–	–	4,0	.156	–	–	●					●	
A3R0800M08P00DF	8	8,00	.315	–	–	4,0	.157	–	–				●		●	

A3G-P-DF • Face Grooving

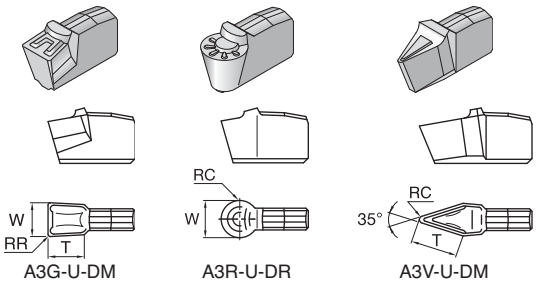
catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0300M3SP02DF	3S	3,00	.118	0,2	.008	–	–	3,5	.138				●	●	●	
A3G0300M3SP04DF	3S	3,00	.118	0,4	.016	–	–	3,5	.138			●	●	●	●	
A3G125I3SP05DF	3S	3,18	.125	0,2	.008	–	–	3,5	.138						●	
A3G0400M4SP04DF	4S	4,00	.157	0,4	.016	–	–	3,5	.138			●	●	●	●	
A3G0400M4SP02DF	4S	4,00	.158	0,2	.008	–	–	3,5	.138			●	●	●	●	
A3G0400M4SP08DF	4S	4,00	.158	0,8	.032	–	–	3,5	.138						●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").

A3R-P-DF • Face Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0300M3SP00DF	3S	3,00	.118	–	–	1,5	.059	–	–			●		●	●	
A3R0400M4SP00DF	4S	4,00	.157	–	–	2,0	.079	–	–			●	●	●	●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").



● first choice
○ alternate choice

		KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
P			●	○	○	○	○	●
M					●	●	●	○
K			○					○
N		○						
S		●			●	●	●	
H								

A3G-U-DM

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0305M03U02DM	3	3,05	.120	0,2	.008	–	–	3,5	.138				●		●	●
A3G0405M04U02DM	4	4,05	.159	0,2	.008	–	–	3,5	.138				●		●	●
A3G0505M05U02DM	5	5,05	.199	0,2	.008	–	–	4,5	.177		●		●		●	
A3G0605M06U04DM	6	6,05	.238	0,4	.016	–	–	4,5	.177		●		●		●	
A3G0805M08U04DM	8	8,05	.317	0,4	.016	–	–	6,0	.236				●		●	
A3G1005M10U05DM	10	10,05	.396	0,5	.020	–	–	6,0	.236				●		●	

A3R-U-DR

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0305M03U00DR	3	3,05	.120	–	–	1,5	.060	–	–				●		●	●
A3R0405M04U00DR	4	4,05	.159	–	–	2,0	.080	–	–				●		●	
A3R0505M05U00DR	5	5,12	.202	–	–	2,6	.101	–	–				●		●	
A3R0605M06U00DR	6	6,05	.238	–	–	3,0	.119	–	–				●		●	
A3R0805M08U00DR	8	8,18	.322	–	–	4,1	.161	–	–		●		●		●	

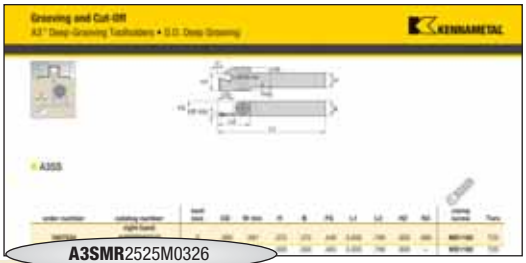
A3V-U-DM

catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3V0000M04U02DM	4	–	–	–	–	0,2	.008	6,0	.236				●		●	
A3V0000M08U08DM	8	–	–	–	–	0,8	.032	11,0	.433				●		●	

NOTE: A3V-U-DM insert can be used in A3PS... or A3US... toolholders only.

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Metric

A3	S	M	R

Inch

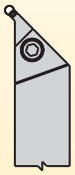
A3	S	S	R
Type of Program	Tool Style	Support Type	Hand of Tool

A3 = Screw Clamp Holder

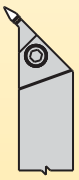
S = Straight



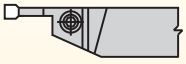
D = 45° profiling



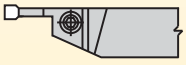
P = 117.5° V-profiling
U = 93° V-profiling



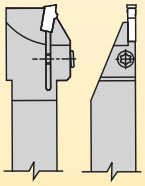
S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters



M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters



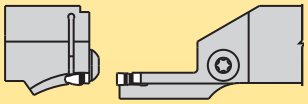
C = Reinforced maximum support width circular clearance



A = Inboard sweep face grooving toolholder



B = Outboard sweep face grooving toolholder



R = Right



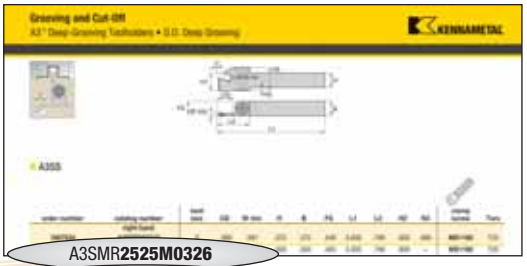
L = Left



N = Neutral

NOTE: A2™ inserts can be used in A3 toolholders with equal seat sizes.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



Metric

2525M	03	26	

Inch

16	03	26	
Shank Size	Seat Size	Max Cutting Depth	Face Grooving Diameter *(optional)*

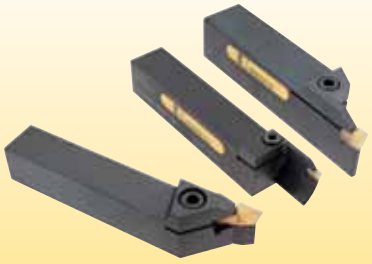
metric:
Height x width in mm, letter indicates tool length according to ISO

inch:
For square shanks, the number indicates the height and width in 1/16" increments
(rectangular:
1st digit = width in 1/8" increments,
2nd digit = height in 1/4" increments)

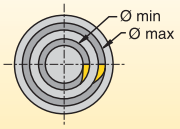
metric tool length (mm)

J = 110 **K** = 125 **M** = 150 **P** = 170 **X** = Other length

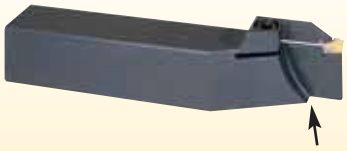
pocket seat size	nominal cutting width (mm)
03/3S	3,05
04/4S	4,05
05	5,05
06	6,05
08	8,05
10	10,05



Ø min – Ø max

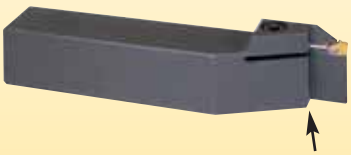


Screw-Clamping Holder Options



Example:
A3SCR -1603-26

circular clearance



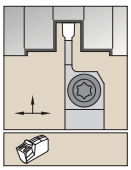
Example:
A3SSR-1605-26

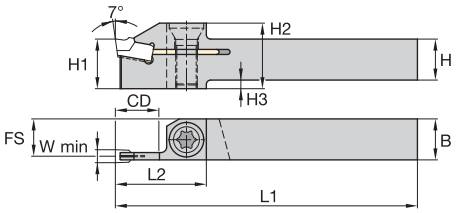
straight clearance

Both A2™ and A3 inserts are designed to fit all A3-style holders.

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.

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.





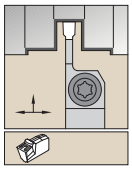
A3SS

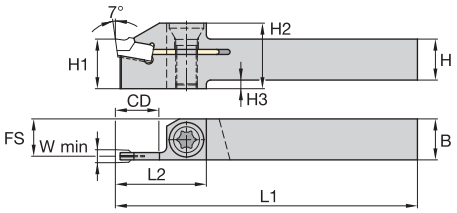


order number	catalog number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	right hand													
1607524	A3SSR060310	3	.390	.087	.375	.375	.340	3.500	.790	.375	.600	.080	MS1160	T20
1607526	A3SSR080310	3	.390	.087	.500	.500	.465	3.500	.790	.500	.600	—	MS1160	T20
1607620	A3SSR080316	3	.630	.087	.500	.500	.465	3.500	1.100	.500	1.040	.320	MS1944	T25
1607802	A3SSR100316	3	.630	.087	.625	.625	.590	4.500	1.100	.625	1.040	.160	MS1944	T25
1607804	A3SSR120316	3	.630	.087	.750	.750	.715	4.500	1.180	.750	1.040	—	MS1944	T25
1607806	A3SSR160316	3	.630	.087	1.000	1.000	.965	6.000	1.180	1.000	1.240	—	MS1944	T25
1607808	A3SSR160326	3	1.020	.087	1.000	1.000	.965	6.000	1.650	1.000	1.240	—	MS1944	T25
1246600	A3SSR080410	4	.390	.118	.500	.500	.453	3.500	1.100	.500	1.040	.287	MS1944	T25
1246606	A3SSR100413	4	.510	.118	.625	.625	.578	4.500	1.100	.625	1.080	.162	MS1944	T25
1246611	A3SSR100419	4	.750	.118	.625	.625	.578	4.500	1.650	.625	1.040	.162	MS1595	T30
1246616	A3SSR120413	4	.510	.118	.750	.750	.703	4.500	1.140	.750	1.040	—	MS1944	T25
1246618	A3SSR120419	4	.750	.118	.750	.750	.703	4.500	1.650	.750	1.040	—	MS1595	T30
1246620	A3SSR160416	4	.630	.118	1.000	1.000	.953	6.000	1.650	1.000	1.240	—	MS1595	T30
1246625	A3SSR160426	4	1.020	.118	1.000	1.000	.953	6.000	1.650	1.000	1.240	—	MS1595	T30
1246629	A3SSR200426	4	1.020	.118	1.250	1.250	1.203	6.000	1.650	1.250	1.500	—	MS1595	T30
1246637	A3SSR200432	4	1.260	.118	1.250	1.250	1.203	6.000	1.970	1.250	1.500	—	MS1595	T30
1246643	A3SSR120513	5	.510	.157	.750	.750	.683	6.000	1.260	.750	1.040	—	MS1595	T30
1246649	A3SSR120519	5	.750	.157	.750	.750	.683	6.000	1.650	.750	1.040	—	MS1595	T30
1246655	A3SSR160516	5	.630	.157	1.000	1.000	.933	6.000	1.260	1.000	1.240	—	MS1595	T30
1246660	A3SSR160526	5	1.020	.157	1.000	1.000	.933	6.000	1.650	1.000	1.240	—	MS1595	T30
1246665	A3SSR200526	5	1.020	.157	1.250	1.250	1.183	6.000	1.650	1.250	1.530	—	MS1595	T30
1192244	A3SSR200532	5	1.260	.157	1.250	1.250	1.183	6.000	2.100	1.250	1.520	—	MS1595	T30
1607810	A3SSR120616	6	.630	.197	.750	.750	.663	4.500	1.280	.750	1.040	—	MS1595	T30
1607812	A3SSR160616	6	.630	.197	1.000	1.000	.913	6.000	1.260	1.000	1.240	—	MS1595	T30
1607814	A3SSR160626	6	1.020	.197	1.000	1.000	.913	6.000	1.650	1.000	1.240	—	MS1595	T30
1607816	A3SSR200626	6	1.020	.197	1.250	1.250	1.163	6.000	1.650	1.250	1.530	—	MS1595	T30
1607818	A3SSR200632	6	1.260	.197	1.250	1.250	1.163	6.000	2.100	1.250	1.530	—	MS1595	T30
1192243	A3SSR160819	8	.750	.236	1.000	1.000	.894	6.000	1.970	1.000	1.300	—	MS1875	T45
1246677	A3SSR160826	8	1.020	.236	1.000	1.000	.894	6.000	1.970	1.000	1.300	—	MS1875	T45
1246680	A3SSR200826	8	1.020	.236	1.250	1.250	1.144	6.000	2.090	1.250	1.560	—	MS1875	T45
1192245	A3SSR200832	8	1.260	.236	1.250	1.250	1.144	6.000	2.090	1.250	1.560	—	MS1875	T45
1775740	A3SSR201032	10	1.260	.375	1.250	1.250	1.085	6.000	2.090	1.250	1.560	—	MS1875	T45

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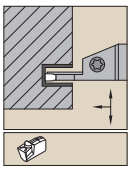
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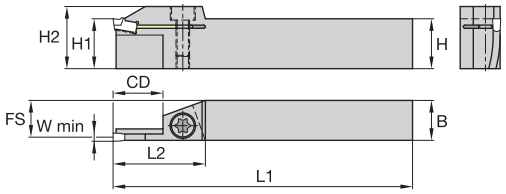


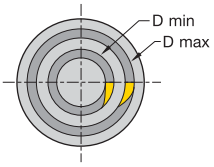


order number	catalog number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	left hand													
1607527	A3SSL080310	3	.390	.087	.500	.500	.465	3.500	.790	.500	.600	—	MS1160	T20
1607801	A3SSL080316	3	.630	.087	.500	.500	.465	3.500	1.100	.500	1.040	.320	MS1944	T25
1607803	A3SSL100316	3	.630	.087	.625	.625	.590	4.500	1.100	.625	1.040	.160	MS1944	T25
1607805	A3SSL120316	3	.630	.087	.750	.750	.715	4.500	1.180	.750	1.040	—	MS1944	T25
1607807	A3SSL160316	3	.630	.087	1.000	1.000	.965	6.000	1.180	1.000	1.240	—	MS1944	T25
1607809	A3SSL160326	3	1.020	.087	1.000	1.000	.965	6.000	1.650	1.000	1.240	—	MS1944	T25
1246617	A3SSL120413	4	.510	.118	.750	.750	.703	4.500	1.140	.750	1.040	—	MS1944	T25
1246619	A3SSL120419	4	.750	.118	.750	.750	.703	4.500	1.650	.750	1.040	—	MS1595	T30
1246623	A3SSL160416	4	.630	.118	1.000	1.000	.953	6.000	1.650	1.000	1.240	—	MS1595	T30
1246627	A3SSL160426	4	1.020	.118	1.000	1.000	.953	6.000	1.650	1.000	1.240	—	MS1595	T30
1246632	A3SSL200426	4	1.020	.118	1.250	1.250	1.203	6.000	1.650	1.250	1.500	—	MS1595	T30
1246640	A3SSL200432	4	1.260	.118	1.250	1.250	1.203	6.000	1.970	1.250	1.500	—	MS1595	T30
1246659	A3SSL160516	5	.630	.157	1.000	1.000	.933	6.000	1.260	1.000	1.240	—	MS1595	T30
1246662	A3SSL160526	5	1.020	.157	1.000	1.000	.933	6.000	1.650	1.000	1.240	—	MS1595	T30
1246667	A3SSL200526	5	1.020	.157	1.250	1.250	1.183	6.000	1.650	1.250	1.530	—	MS1595	T30
1246671	A3SSL200532	5	1.260	.157	1.250	1.250	1.183	6.000	2.100	1.250	1.520	—	MS1595	T30
1607811	A3SSL120616	6	.630	.197	.750	.750	.663	4.500	1.280	.750	1.040	—	MS1595	T30
1607813	A3SSL160616	6	.630	.197	1.000	1.000	.913	6.000	1.260	1.000	1.240	—	MS1595	T30
1607815	A3SSL160626	6	1.020	.197	1.000	1.000	.913	6.000	1.650	1.000	1.240	—	MS1595	T30
1607817	A3SSL200626	6	1.020	.197	1.250	1.250	1.163	6.000	1.650	1.250	1.530	—	MS1595	T30
1607819	A3SSL200632	6	1.260	.197	1.250	1.250	1.163	6.000	2.100	1.250	1.530	—	MS1595	T30
1246674	A3SSL160819	8	.750	.236	1.000	1.000	.894	6.000	1.970	1.000	1.300	—	MS1875	T45
1229300	A3SSL160826	8	1.020	.236	1.000	1.000	.894	6.000	1.970	1.000	1.300	—	MS1875	T45
1246681	A3SSL200826	8	1.020	.236	1.250	1.250	1.144	6.000	2.090	1.250	1.560	—	MS1875	T45
1246686	A3SSL200832	8	1.260	.236	1.250	1.250	1.144	6.000	2.090	1.250	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.







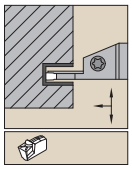
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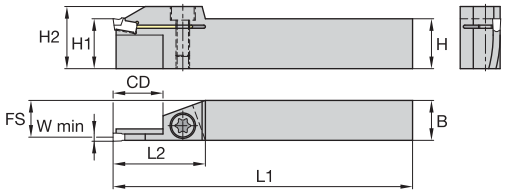


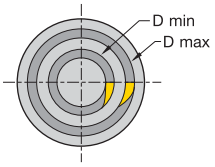
order number	catalog number	seat size	D min	D max	W min	CD	H	B	L1	L2	H1	H2	clamp screw	Torx
	right hand													
1513070	**A3SAR120425060075**	4	2.362	2.953	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1513565	**A3SAR160425060075**	4	2.362	2.953	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513069	**A3SAR120425075100**	4	2.953	3.937	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1513349	**A3SAR160425075100**	4	2.953	3.937	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513068	**A3SAR120425100180**	4	3.937	7.087	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1514278	**A3SAR160425100180**	4	3.937	7.087	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513561	**A3SAR160425180250**	4	7.087	9.843	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513560	**A3SAR160425250350**	4	9.843	13.780	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513558	**A3SAR160425350999**	4	13.780	—	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513516	**A3SAR124S10025030**	4S	.984	1.181	.158	.390	.750	.750	6.000	1.024	.750	1.197	**MS1970**	T30
1513570	**A3SAR164S10025030**	4S	.984	1.181	.158	.390	1.000	1.000	6.000	1.024	1.000	1.197	**MS1970**	T30
1513512	**A3SAR124S10030035**	4S	1.181	1.378	.158	.390	.750	.750	6.000	1.024	.750	1.197	**MS1970**	T30
1513569	**A3SAR164S10030035**	4S	1.181	1.378	.158	.390	1.000	1.000	6.000	1.024	1.000	1.197	**MS1970**	T30
1513514	**A3SAR124S20035040**	4S	1.378	1.575	.158	.790	.750	.750	6.000	1.402	.750	1.197	**MS1970**	T30
1513568	**A3SAR164S20035040**	4S	1.378	1.575	.158	.790	1.000	1.000	6.000	1.402	1.000	1.197	**MS1970**	T30
1513513	**A3SAR124S25040050**	4S	1.575	1.969	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1514266	**A3SAR164S25040050**	4S	1.575	1.969	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513511	**A3SAR124S25050060**	4S	1.969	2.362	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1513566	**A3SAR164S25050060**	4S	1.969	2.362	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513557	**A3SAR160525060075**	5+6	2.362	2.953	.197	.980	1.000	1.000	6.000	1.650	1.000	1.197	**MS1970**	T30
1513555	**A3SAR160530075100**	5+6	2.953	3.937	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	**MS1970**	T30
1513554	**A3SAR160530100180**	5+6	3.937	7.087	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	**MS1970**	T30
1513552	**A3SAR160530180250**	5+6	7.087	9.843	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	**MS1970**	T30
1513550	**A3SAR160530250350**	5+6	9.843	13.780	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	**MS1970**	T30
1514280	**A3SAR160530350999**	5+6	13.780	—	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	**MS1970**	T30

(continued)

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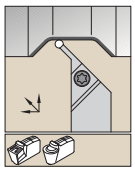


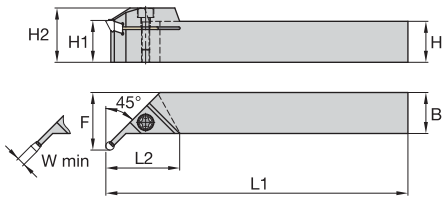






order number	catalog number	seat size	D min	D max	W min	CD	H	B	L1	L2	H1	H2	clamp screw	Torx
	left hand													
1513531	A3SAL120425060075	4	2.362	2.953	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513537	A3SAL160425060075	4	2.362	2.953	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513529	A3SAL120425075100	4	2.953	3.937	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513535	A3SAL160425075100	4	2.953	3.937	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513527	A3SAL120425100180	4	3.937	7.087	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513533	A3SAL160425100180	4	3.937	7.087	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513525	A3SAL120425180250	4	7.087	9.843	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513532	A3SAL160425180250	4	7.087	9.843	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513523	A3SAL120425250350	4	9.843	13.780	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513530	A3SAL160425250350	4	9.843	13.780	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513521	A3SAL120425350999	4	13.780	—	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513526	A3SAL160425350999	4	13.780	—	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513544	A3SAL124S10025030	4S	.984	1.181	.158	.390	.750	.750	6.000	1.024	.750	1.197	MS1970	T30
1513547	A3SAL164S10025030	4S	.984	1.181	.158	.390	1.000	1.000	6.000	1.024	1.000	1.197	MS1970	T30
1513541	A3SAL124S10030035	4S	1.181	1.378	.158	.390	.750	.750	6.000	1.024	.750	1.197	MS1970	T30
1513546	A3SAL164S10030035	4S	1.181	1.378	.158	.390	1.000	1.000	6.000	1.024	1.000	1.197	MS1970	T30
1513538	A3SAL124S20035040	4S	1.378	1.575	.158	.790	.750	.750	6.000	1.402	.750	1.197	MS1970	T30
1513543	A3SAL164S20035040	4S	1.378	1.575	.158	.790	1.000	1.000	6.000	1.402	1.000	1.197	MS1970	T30
1513536	A3SAL124S25040050	4S	1.575	1.969	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513540	A3SAL164S25040050	4S	1.575	1.969	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513534	A3SAL124S25050060	4S	1.969	2.362	.158	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1514321	A3SAL164S25050060	4S	1.969	2.362	.158	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513519	A3SAL120525060075	5+6	2.362	2.953	.197	.980	.750	.750	6.000	1.650	.750	1.197	MS1970	T30
1513524	A3SAL160525060075	5+6	2.362	2.953	.197	.980	1.000	1.000	6.000	1.650	1.000	1.197	MS1970	T30
1513522	A3SAL160530075100	5+6	2.953	3.937	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	MS1970	T30
1513067	A3SAL120530100180	5+6	3.937	7.087	.197	1.180	.750	.750	6.000	1.839	.750	1.197	MS1970	T30
1514225	A3SAL160530100180	5+6	3.937	7.087	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	MS1970	T30
1513066	A3SAL120530180250	5+6	7.087	9.843	.197	1.180	.750	.750	6.000	1.839	.750	1.197	MS1970	T30
1513520	A3SAL160530180250	5+6	7.087	9.843	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	MS1970	T30
1513064	A3SAL120530250350	5+6	9.843	13.780	.197	1.180	.750	.750	6.000	1.839	.750	1.197	MS1970	T30
1513517	A3SAL160530250350	5+6	9.843	13.780	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	MS1970	T30
1513346	A3SAL120530350999	5+6	13.780	—	.197	1.180	.750	.750	6.000	1.839	.750	1.197	MS1970	T30
1513515	A3SAL160530350999	5+6	13.780	—	.197	1.180	1.000	1.000	6.000	1.839	1.000	1.197	MS1970	T30

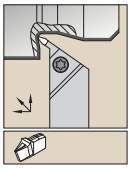


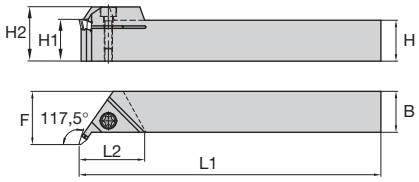


A3DS



order number	catalog number	seat size	H	B	L1	L2	F	H1	H2	clamp screw	Torx
	right hand										
2598657	**A3DSR1604**	3+4	1.00	1.00	6.00	1.34	1.25	1.00	1.24	**MS1944**	T25
2598679	**A3DSR1606**	5+6	1.00	1.00	6.00	1.57	1.25	1.00	1.24	**MS1595**	T30
	left hand										
2598658	**A3DSL1604**	3+4	1.00	1.00	6.00	1.34	1.25	1.00	1.24	**MS1944**	T25
2598660	**A3DSL1606**	5+6	1.00	1.00	6.00	1.57	1.25	1.00	1.24	**MS1595**	T30



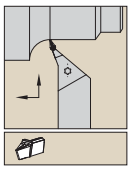


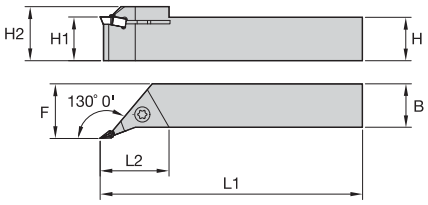
A3PS



order number	catalog number	seat size	H	B	L1	L2	F	H1	H2	clamp screw	Torx
	right hand										
2598680	**A3PSR1604**	4	1.00	1.00	6.00	1.34	1.25	1.00	1.24	**MS1595**	T30
2598673	**A3PSR1608**	8	1.00	1.00	6.00	1.96	1.25	1.00	1.28	**MS1875**	T45
	left hand										
2598662	**A3PSL1604**	4	1.00	1.00	6.00	1.34	1.25	1.00	1.24	**MS1595**	T30
2598674	**A3PSL1608**	8	1.00	1.00	6.00	1.96	1.25	1.00	1.28	**MS1875**	T45

NOTE: Approach angle 117.5°.
Only insert A3V-U-DM can be used.





A3US

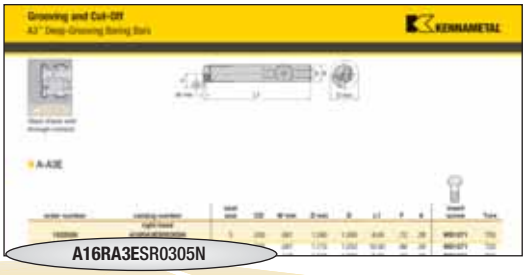


order number	catalog number	seat size	H	B	L1	L2	F	H1	H2	clamp screw	Torx
	right hand										
2598675	**A3USR1604**	4	1.00	1.00	6.00	1.57	1.25	1.00	1.24	**MS1595**	T30
2598677	**A3USR1608**	8	1.00	1.00	6.00	1.96	1.25	1.00	1.28	**MS1875**	T45
	left hand										
2598681	**A3USL1604**	4	1.00	1.00	6.00	1.57	1.25	1.00	1.24	**MS1595**	T30

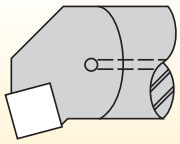
NOTE: Approach angle 93°.
Only insert A3V-U-DM can be used with these toolholders.

How Do Catalog Numbers Work?

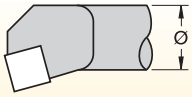
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A
Steel Bar with Coolant



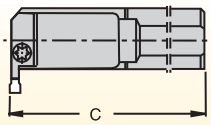
16
Bar Diameter



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

metric bars:
Bar diameter in millimeters

R
Bar Length

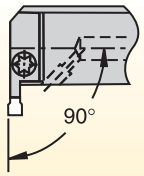


inch bars:
R = 8"
S = 10"
T = 12"

metric bars:
R = 200mm
S = 250mm
T = 300mm

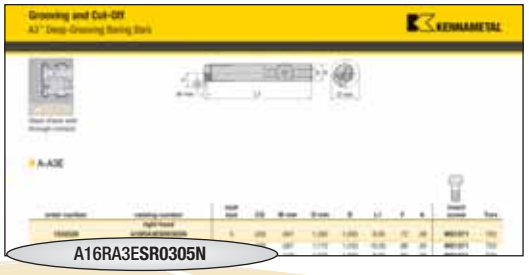
A3
A3 System

E
Tool Style



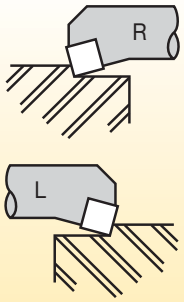
E = End mounted (90°)

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

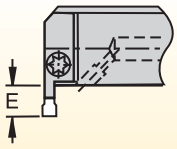


S	R	03	05	N
Support Type	Hand of Tool	Seat Size	Grooving Depth in mm	Tool Units

S = Standard support for a wide range of groove widths



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

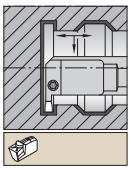


conversions:

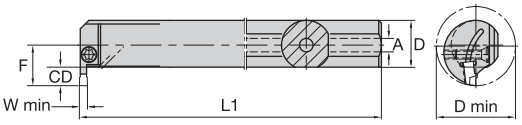
mm		inch
5mm	=	.20"
8mm	=	.32"
10mm	=	.39"
12mm	=	.47"
15mm	=	.59"

N = Inch
M = Metric





Steel shank with through coolant.



A-A3E



order number	catalog number	seat size	CD	W min	D min	D	L1	F	A	insert screw	Torx
	right hand										
1522528	**A16RA3ESR0305N**	3	.200	.087	1.260	1.000	8.00	.72	.28	**MS1571**	T20
1522530	**A20SA3ESR0305N**	3	.200	.087	1.772	1.250	10.00	.86	.39	**MS1571**	T20
1522830	**A16RA3ESR0408N**	4	.315	.118	1.575	1.000	8.00	.80	.28	**MS1571**	T20
1522841	**A20SA3ESR0408N**	4	.315	.118	1.890	1.250	10.00	.98	.39	**MS1571**	T20
1522844	**A24TA3ESR0408N**	4	.315	.118	2.205	1.500	12.00	1.10	.39	**MS1571**	T20
1522720	**A20SA3ESR0510N**	5	.390	.157	1.772	1.250	10.00	1.02	.39	**MS1162**	T25
1522881	**A24TA3ESR0510N**	5	.390	.157	2.362	1.500	12.00	1.18	.39	**MS1162**	T25
1522882	**A20SA3ESR0612N**	6	.470	.197	1.772	1.250	10.00	1.10	.39	**MS1162**	T25
1522884	**A24TA3ESR0612N**	6	.470	.197	2.520	1.500	12.00	1.26	.39	**MS1162**	T25
1522885	**A24TA3ESR0815N**	8	.590	.236	2.756	1.500	12.00	1.37	.39	**MS1163**	T30
	left hand										
1522886	**A16RA3ESL0305N**	3	.200	.087	1.260	1.000	8.00	.72	.28	**MS1571**	T20
1522887	**A20SA3ESL0305N**	3	.200	.087	1.772	1.250	10.00	.86	.39	**MS1571**	T20
1522892	**A16RA3ESL0408N**	4	.315	.118	1.575	1.000	8.00	.80	.28	**MS1571**	T20
1522895	**A20SA3ESL0408N**	4	.315	.118	1.890	1.250	10.00	.98	.39	**MS1571**	T20
1522896	**A24TA3ESL0408N**	4	.315	.118	2.205	1.500	12.00	1.10	.39	**MS1571**	T20
1522898	**A20SA3ESL0510N**	5	.390	.157	1.772	1.250	10.00	1.02	.39	**MS1162**	T25
1522899	**A24TA3ESL0510N**	5	.390	.157	2.362	1.500	12.00	1.18	.39	**MS1162**	T25
1522900	**A20SA3ESL0612N**	6	.470	.197	1.772	1.250	10.00	1.10	.39	**MS1162**	T25
1522901	**A24TA3ESL0612N**	6	.470	.197	2.520	1.500	12.00	1.26	.39	**MS1162**	T25
1522902	**A24TA3ESL0815N**	8	.590	.236	2.756	1.500	12.00	1.37	.39	**MS1163**	T30



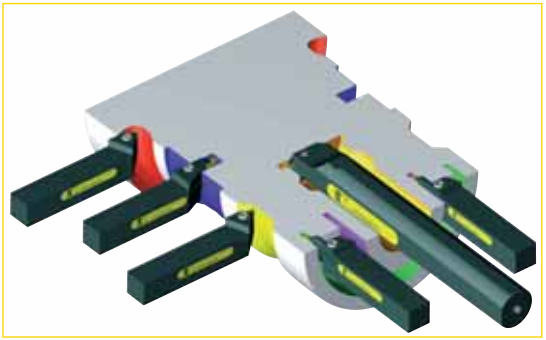
A3™ Deep Grooving

The best choice for high productivity with outstanding application flexibility.

The A3 System is designed specifically for deep grooving operations. The A3 platform enables customers to reach deeper depths while maintaining chip control and tool rigidity.

Performance
- One insert performs:
  - O.D. operations
  - I.D. operations
  - Face grooving operations
- In addition, the A3 system's performance is enhanced by:
  - Beyond™ CVD grades
  - The Beyond Tooling Selection System

Performance
- A3 deep grooving tooling is compatible with square shank, KM™, and Kennametal Capto® platforms.



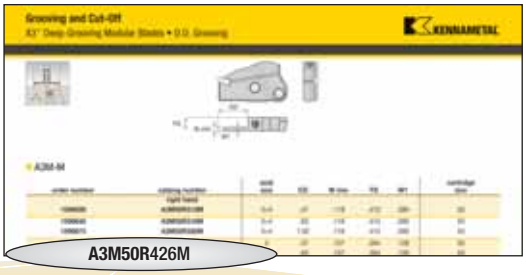
Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



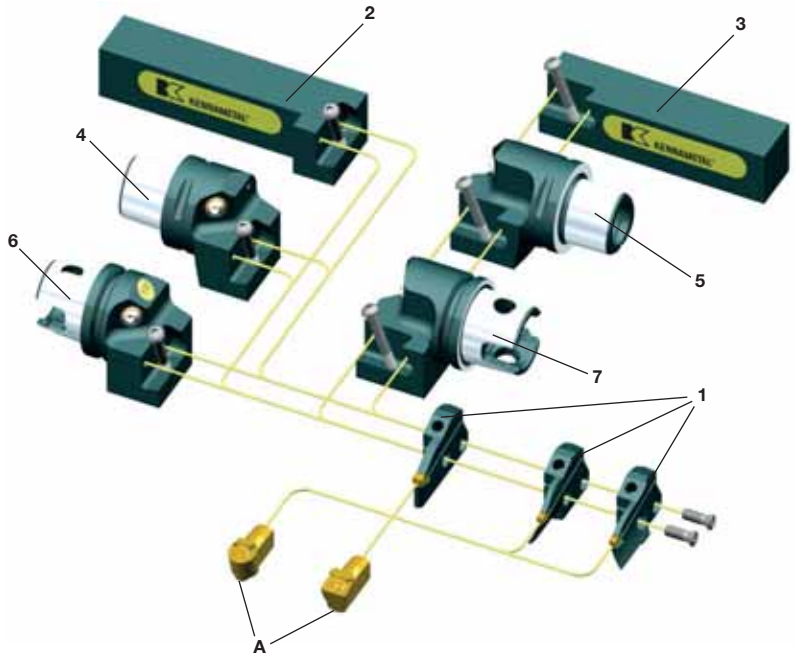
A3M	50	R
A3 Modular Grooving System	Blade Size	Hand of Tool

R = Right hand



L = Left hand



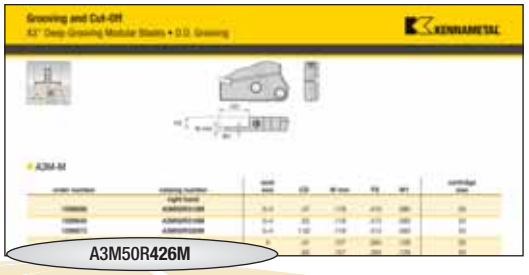


Legend		page(s)
A	A2™/A3 Inserts	D30–D33
1	O.D. and Face Grooving Blades	D46–D50
2	KGME Toolholder	D55
3	KGMS Toolholder	D54
4	Capto® KGME Cutting Unit	D58
5	Capto KGMS Cutting Unit	D58
6	KM™ KGME Cutting Unit	D57
7	KM KGMS Cutting Unit	D56–D57

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.

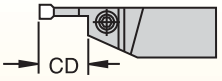
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



4
Seat Size

pocket seat size	nominal cutting width (mm)
03/3S	3,05
04/4S	4,05
05	5,05
06	6,05

26
Grooving Depth in mm

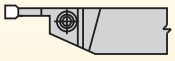


conversions:

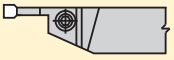
mm		inch
12mm	=	.47
16mm	=	.63
20mm	=	.79
26mm	=	1.02
32mm	=	1.26

M
Tool Style

S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters



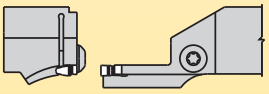
M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters



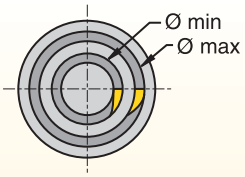
A = Inboard sweep face grooving toolholder



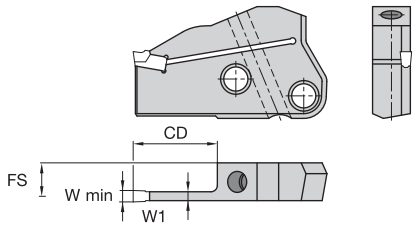
B = Outboard sweep face grooving toolholder



Face Grooving Diameter Range



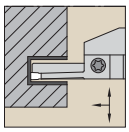


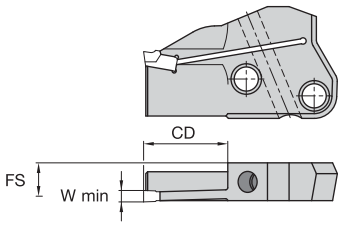


A3M-M

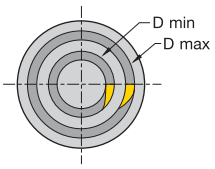
order number	catalog number	seat size	CD	W min	FS	W1	blade size
	right hand						
1599838	**A3M50R312M**	3+4	.47	.118	.413	.090	50
1599840	**A3M50R316M**	3+4	.63	.118	.413	.090	50
1599873	**A3M50R326M**	3+4	1.02	.118	.413	.090	50
1599875	**A3M50R412M**	4	.47	.157	.394	.129	50
1599912	**A3M50R416M**	4	.63	.157	.394	.129	50
1599915	**A3M50R426M**	4	1.02	.157	.394	.129	50
1599917	**A3M50R432M**	4	1.26	.157	.394	.129	50
1599919	**A3M50R516M**	5+6	.63	.187	.374	.169	50
1599921	**A3M50R526M**	5+6	1.02	.187	.374	.169	50
1599923	**A3M50R532M**	5+6	1.26	.187	.374	.169	50
1599925	**A3M50R616M**	6	.63	.236	.354	.208	50
1599927	**A3M50R626M**	6	1.02	.236	.354	.208	50
1599929	**A3M50R632M**	6	1.26	.236	.354	.208	50
	left hand						
1599839	**A3M50L312M**	3+4	.47	.118	.413	.090	50
1599872	**A3M50L316M**	3+4	.63	.118	.413	.090	50
1599874	**A3M50L326M**	3+4	1.02	.118	.413	.090	50
1599911	**A3M50L412M**	4	.47	.157	.394	.129	50
1599913	**A3M50L416M**	4	.63	.157	.394	.129	50
1599916	**A3M50L426M**	4	1.02	.157	.394	.129	50
1599918	**A3M50L432M**	4	1.26	.157	.394	.129	50
1599920	**A3M50L516M**	5+6	.63	.187	.374	.169	50
1599922	**A3M50L526M**	5+6	1.02	.187	.374	.169	50
1599924	**A3M50L532M**	5+6	1.26	.187	.374	.169	50
1599926	**A3M50L616M**	6	.63	.236	.354	.208	50
1599928	**A3M50L626M**	6	1.02	.236	.354	.208	50
1599930	**A3M50L632M**	6	1.26	.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.



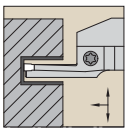


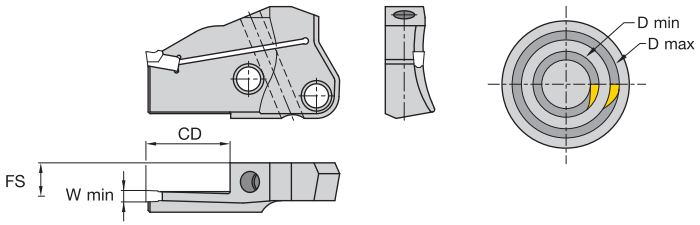




A3M-A Inboard Sweep

order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542476	A3M50R312A025030	3S	.984	1.181	.118	.47	.413	50
2542477	A3M50R312A030035	3S	1.181	1.378	.118	.47	.413	50
2542478	A3M50R316A035040	3S	1.378	1.575	.118	.63	.413	50
2542479	A3M50R316A040050	3S	1.575	1.969	.118	.63	.413	50
2542480	A3M50R316A050060	3S	1.969	2.362	.118	.63	.413	50
1599937	A3M50R412A025030	4S	.984	1.181	.157	.47	.394	50
1599938	A3M50R412A030035	4S	1.181	1.378	.157	.47	.394	50
1599939	A3M50R420A035040	4S	1.378	1.575	.157	.79	.394	50
1599940	A3M50R420A040050	4S	1.575	1.969	.157	.79	.394	50
1599951	A3M50R420A050060	4S	1.969	2.362	.157	.79	.394	50
1599952	A3M50R426A060075	4	2.362	2.953	.157	1.02	.394	50
1599953	A3M50R426A075100	4	2.953	3.937	.157	1.02	.394	50
1599955	A3M50R426A100180	4	3.937	7.087	.157	1.02	.394	50
1599956	A3M50R426A180250	4	7.087	9.843	.157	1.02	.394	50
1599957	A3M50R426A250350	4	9.843	13.780	.157	1.02	.394	50
1599958	A3M50R426A350999	4	13.780	—	.157	1.02	.394	50
1599959	A3M50R526A060075	5+6	2.362	2.953	.197	1.02	.374	50
1599960	A3M50R532A075100	5+6	2.953	3.937	.197	1.26	.374	50
1599961	A3M50R532A100180	5+6	3.937	7.087	.197	1.26	.374	50
1599962	A3M50R532A180250	5+6	7.087	9.843	.197	1.26	.374	50
1599963	A3M50R532A250350	5+6	9.843	13.780	.197	1.26	.374	50
1599964	A3M50R532A350999	5+6	13.780	—	.197	1.26	.374	50
	left hand							
2542481	A3M50L312A025030	3S	.984	1.181	.118	.47	.413	50
2542482	A3M50L312A030035	3S	1.181	1.378	.118	.47	.413	50
2542483	A3M50L316A035040	3S	1.378	1.575	.118	.63	.413	50
2542484	A3M50L316A040050	3S	1.575	1.969	.118	.63	.413	50
2542485	A3M50L316A050060	3S	1.969	2.362	.118	.63	.413	50
1599965	A3M50L412A025030	4S	.984	1.181	.157	.47	.394	50
1599966	A3M50L412A030035	4S	1.181	1.378	.157	.47	.394	50
1600096	A3M50L420A035040	4S	1.378	1.575	.157	.79	.394	50
1600098	A3M50L420A040050	4S	1.575	1.969	.157	.79	.394	50
1600099	A3M50L420A050060	4S	1.969	2.362	.157	.79	.394	50
1600142	A3M50L426A060075	4	2.362	2.953	.157	1.02	.394	50
1600143	A3M50L426A075100	4	2.953	3.937	.157	1.02	.394	50
1600144	A3M50L426A100180	4	3.937	7.087	.157	1.02	.394	50
1600145	A3M50L426A180250	4	7.087	9.843	.157	1.02	.394	50
1600146	A3M50L426A250350	4	9.843	13.780	.157	1.02	.394	50
1600147	A3M50L426A350999	4	13.780	—	.157	1.02	.394	50
1600149	A3M50L526A060075	5+6	2.362	2.953	.197	1.02	.374	50
1600150	A3M50L532A075100	5+6	2.953	3.937	.197	1.26	.374	50
1600161	A3M50L532A100180	5+6	3.937	7.087	.197	1.26	.374	50
1600162	A3M50L532A180250	5+6	7.087	9.843	.197	1.26	.374	50
1600163	A3M50L532A250350	5+6	9.843	13.780	.197	1.26	.374	50
1600164	A3M50L532A350999	5+6	13.780	—	.197	1.26	.374	50





A3M-B Outboard Sweep

order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542486	**A3M50R312B025030**	3S	.984	1.181	.118	.47	.413	50
2542487	**A3M50R312B030035**	3S	1.181	1.378	.118	.47	.413	50
2542488	**A3M50R316B035040**	3S	1.378	1.575	.118	.63	.413	50
2542489	**A3M50R316B040050**	3S	1.575	1.969	.118	.63	.413	50
2542490	**A3M50R316B050060**	3S	1.969	2.362	.118	.63	.413	50
1600165	**A3M50R412B025030**	4S	.984	1.181	.157	.47	.394	50
1600166	**A3M50R412B030035**	4S	1.181	1.378	.157	.47	.394	50
1600167	**A3M50R420B035040**	4S	1.378	1.575	.157	.79	.394	50
1600168	**A3M50R420B040050**	4S	1.575	1.969	.157	.79	.394	50
1600169	**A3M50R420B050060**	4S	1.969	2.362	.157	.79	.394	50
1600170	**A3M50R426B060075**	4	2.362	2.953	.157	1.02	.394	50
1600171	**A3M50R426B075100**	4	2.953	3.937	.157	1.02	.394	50
1600172	**A3M50R426B100180**	4	3.937	7.087	.157	1.02	.394	50
1600173	**A3M50R426B180250**	4	7.087	9.843	.157	1.02	.394	50
1600174	**A3M50R426B250350**	4	9.843	13.780	.157	1.02	.394	50
1600175	**A3M50R426B350999**	4	13.780	—	.157	1.02	.394	50
1600176	**A3M50R526B060075**	5+6	2.362	2.953	.197	1.02	.374	50
1600177	**A3M50R532B075100**	5+6	2.953	3.937	.197	1.26	.374	50
1600178	**A3M50R532B100180**	5+6	3.937	7.087	.197	1.26	.374	50
1600179	**A3M50R532B180250**	5+6	7.087	9.843	.197	1.26	.374	50
1600180	**A3M50R532B250350**	5+6	9.843	13.780	.197	1.26	.374	50
1600191	**A3M50R532B350999**	5+6	13.780	—	.197	1.26	.374	50
	left hand							
2542491	**A3M50L312B025030**	3S	.984	1.181	.118	.47	.413	50
2542492	**A3M50L312B030035**	3S	1.181	1.378	.118	.47	.413	50
2542493	**A3M50L316B035040**	3S	1.378	1.575	.118	.63	.413	50
2542494	**A3M50L316B040050**	3S	1.575	1.969	.118	.63	.413	50
2542495	**A3M50L316B050060**	3S	1.969	2.362	.118	.63	.413	50
1600192	**A3M50L412B025030**	4S	.984	1.181	.157	.47	.394	50
1600193	**A3M50L412B030035**	4S	1.181	1.378	.157	.47	.394	50
1600194	**A3M50L420B035040**	4S	1.378	1.575	.157	.79	.394	50
1600195	**A3M50L420B040050**	4S	1.575	1.969	.157	.79	.394	50
1600196	**A3M50L420B050060**	4S	1.969	2.362	.157	.79	.394	50
1600197	**A3M50L426B060075**	4	2.362	2.953	.157	1.02	.394	50
1600198	**A3M50L426B075100**	4	2.953	3.937	.157	1.02	.394	50
1600212	**A3M50L426B100180**	4	3.937	7.087	.157	1.02	.394	50
1600213	**A3M50L426B180250**	4	7.087	9.843	.157	1.02	.394	50
1600214	**A3M50L426B250350**	4	9.843	13.780	.157	1.02	.394	50
1600215	**A3M50L426B350999**	4	13.780	—	.157	1.02	.394	50
1600216	**A3M50L526B060075**	5+6	2.362	2.953	.197	1.02	.374	50
1600217	**A3M50L532B075100**	5+6	2.953	3.937	.197	1.26	.374	50
1600218	**A3M50L532B100180**	5+6	3.937	7.087	.197	1.26	.374	50
1600219	**A3M50L532B180250**	5+6	7.087	9.843	.197	1.26	.374	50
1600241	**A3M50L532B250350**	5+6	9.843	13.780	.197	1.26	.374	50
1600242	**A3M50L532B350999**	5+6	13.780	—	.197	1.26	.374	50



Beyond™ PVD Grades

beyond™

The advanced PVD coating offered by Beyond ISO Carbide Insert Expansion is well suited to resist high-temperatures associated with machining tough alloys. By offering increased tool life (by 30–40%), the general engineering, transportation, aerospace, energy, and earthworks markets can experience benefits in their profitability as well as utilize the strength of the new PVD coating in combination with the broad product offering to perform turning, grooving, and cut-off operations in a wide array of materials and applications while maintaining consistent chip control and minimizing insert edge wear.

KCU10

- PVD-coated grade with excellent wear resistance. Finishing to medium applications.
- Use in all materials, especially stainless steels and high-temp alloys.
- Increase speed by 20–30% and feed by 10–15%.

KCU25

- PVD-coated grade with superior edge toughness and excellent wear resistance. Medium to roughing applications.
- Use in all materials.
- Increase speed, feed, and depth of cut by 10–20%.

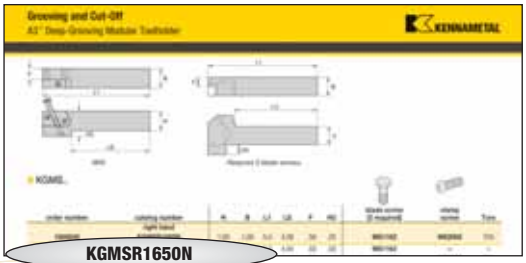
Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



KGMSR1650N
KGMSR2525M50

Inch

KGM	S	R	16	50	N	

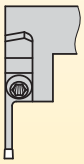
Metric

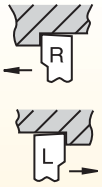
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

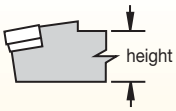
S



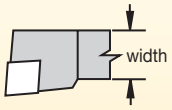
E







shank height in millimeters



shank width in millimeters

square shanks:
The number indicates the toolholder cross section in 1/16" increments.

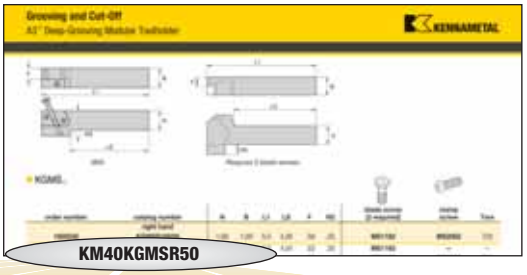
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

N = Inch
M = 150mm
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

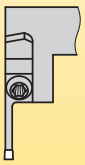


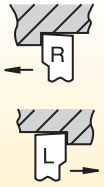
KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S



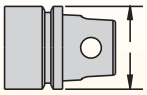
E



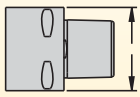


Y = Mazak® INTEGREX® Y-series machines

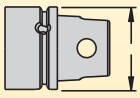
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



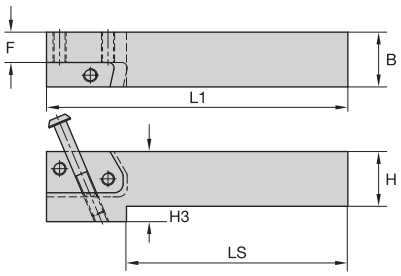
KMXMZ size
KM63XMZ™ = 63mm dia.



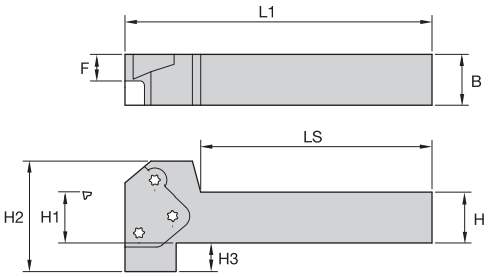


(KM-KGMSR...)

(KM-KGMEL...)



M50
2 blade screws required

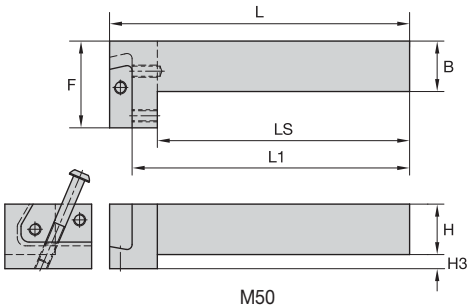


M65
3 blade screws required

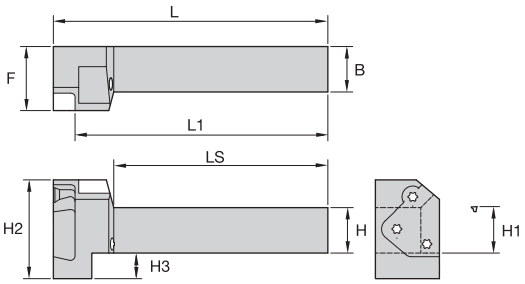
KGMS..

order number	catalog number	H	B	L1	LS	F	H2	H3	blade screw	Torx	clamp screw	Torx
	right hand											
1600245	**KGMSR1650N**	1.00	1.00	5.5	4.26	.56	–	.25	**MS1162**	T25	**MS2002**	T25
3556992	**KGMSR1665N**	1.00	1.00	6.0	4.54	.53	2.09	.50	**MS1163**	T30	**–**	–
1617400	**KGMSR2050N**	1.25	1.25	5.5	–	.81	–	–	**MS1162**	T25	**MS2002**	T25
3557104	**KGMSR2065N**	1.25	1.25	6.0	4.90	.78	2.09	.25	**MS1163**	T30	**–**	–
1903553	**KGMSR2450N**	1.50	1.50	5.5	–	1.06	–	–	**MS1162**	T25	**MS2002**	T25
3557106	**KGMSR2465N**	1.50	1.50	7.0	5.90	1.03	2.09	–	**MS1163**	T30	**–**	–
	left hand											
1600246	**KGMSL1650N**	1.00	1.00	5.5	4.26	.56	–	.25	**MS1162**	T25	**MS2002**	T25
3557103	**KGMSL1665N**	1.00	1.00	6.0	4.54	.53	2.09	.50	**MS1163**	T30	**–**	–
1617591	**KGMSL2050N**	1.25	1.25	5.5	–	.81	–	–	**MS1162**	T25	**MS2002**	T25
3557105	**KGMSL2065N**	1.25	1.25	6.0	4.90	.78	2.09	.25	**MS1163**	T30	**–**	–
1909004	**KGMSL2450N**	1.50	1.50	5.5	–	1.06	–	–	**MS1162**	T25	**MS2002**	T25
3557107	**KGMSL2465N**	1.50	1.50	7.0	5.90	1.03	2.09	–	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



M50
2 blade screws required

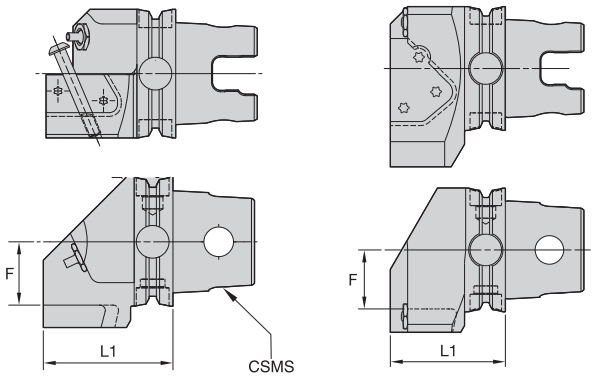


M65
3 blade screws required

KGME..

order number	catalog number	H	B	L1	LS	F	H2	H3	blade screw	Torx	clamp screw	Torx
	right hand											
1600263	**KGMER1650N**	1.00	1.00	5.5	4.96	1.70	—	.24	**MS1162**	T25	**MS2002**	T25
3557108	**KGMER1665N**	1.00	1.00	5.5	4.70	1.38	2.09	.50	**MS1163**	T30	**—**	—
1617592	**KGMER2050N**	1.25	1.25	5.5	4.96	1.70	—	—	**MS1162**	T25	**MS2002**	T25
3557110	**KGMER2065N**	1.25	1.25	5.5	4.70	1.38	2.09	.25	**MS1163**	T30	**—**	—
1907344	**KGMER2450N**	1.50	1.50	5.5	4.96	1.70	—	—	**MS1162**	T25	**MS2002**	T25
3557112	**KGMER2465N**	1.50	1.50	6.5	5.70	1.50	2.09	—	**MS1163**	T30	**—**	—
	left hand											
1600264	**KGMEL1650N**	1.00	1.00	5.5	4.96	1.70	—	.24	**MS1162**	T25	**MS2002**	T25
3557109	**KGMEL1665N**	1.00	1.00	5.5	4.70	1.38	2.09	.50	**MS1163**	T30	**—**	—
1617593	**KGMEL2050N**	1.25	1.25	5.5	4.96	1.70	—	—	**MS1162**	T25	**MS2002**	T25
3557111	**KGMEL2065N**	1.25	1.25	5.5	4.70	1.38	2.09	.25	**MS1163**	T30	**—**	—
1909003	**KGMEL2450N**	1.50	1.50	5.5	4.96	1.70	—	—	**MS1162**	T25	**MS2002**	T25
3557113	**KGMEL2465N**	1.50	1.50	6.5	5.70	1.50	2.09	—	**MS1163**	T30	**—**	—

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.

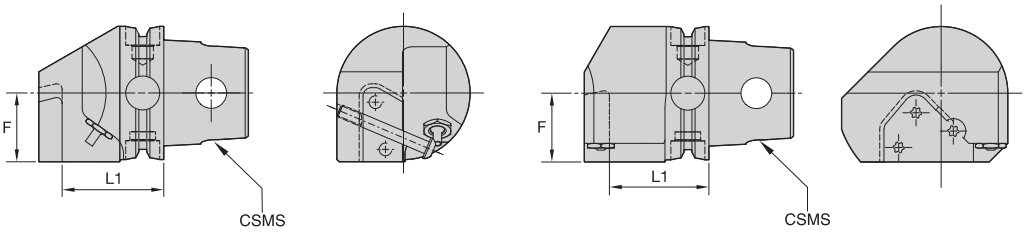


M50 M65

KM-KGMS..

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
3950268	**KM40TSKGMSR50**	KM40TS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	2.30	23,0	.91	**–**	T25	**–**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	2.11	22,0	.87	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3670383	**KM80TSKGMSR50**	KM80TS	66,5	2.62	41,0	1.61	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	2.50	40,0	1.57	**MS1163**	T30	**–**	–
	left hand									
3950267	**KM40TSKGMSL50**	KM40TS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	2.30	23,0	.91	**–**	T25	**–**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	2.11	22,0	.87	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3670371	**KM80TSKGMSL50**	KM80TS	66,5	2.62	41,0	1.61	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	2.50	40,0	1.57	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



M50 M65

KM-KGME..

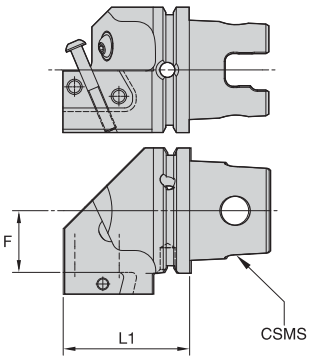
order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
3950266	**KM40TSKGMER50**	KM40TS	28,0	1.10	20,5	.81	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	1.50	25,5	1.00	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	1.85	25,5	1.00	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	1.89	32,5	1.28	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	1.85	32,5	1.28	**MS1163**	T30	**–**	–
3590203	**KM63TSKGMSR65**	KM63TS	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	2.28	40,5	1.59	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	2.24	40,5	1.59	**MS1163**	T30	**–**	–

(continued)

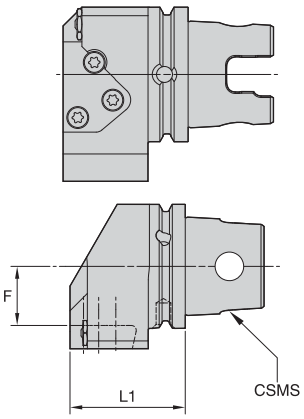
(KM-KGME.. continued)

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	left hand									
3950265	**KM40TSKGMEL50**	KM40TS	28,0	1.10	20,5	.81	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	1.50	25,5	1.00	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	1.85	25,5	1.00	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	1.89	32,5	1.28	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	1.85	32,5	1.28	**MS1163**	T30	**–**	–
3590204	**KM63TSKGMSL65**	KM63TS	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	2.28	40,5	1.59	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	2.24	40,5	1.59	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



M50

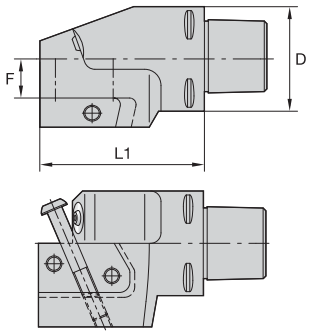


M65

KM-XMZKGMS..

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
	left hand									
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–

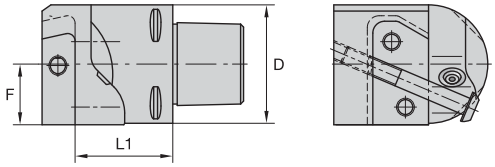
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



C-KGMS

order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756576	**C4KGMSR50**	40	1.57	63,5	2.50	10	.39	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	1.97	63,5	2.50	15	.59	**MS1162**	T25	**MS2002**	T25
	left hand										
1756578	**C4KGMSL50**	40	1.57	63,5	2.50	10	.39	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	1.97	63,5	2.50	15	.59	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D59–D60.



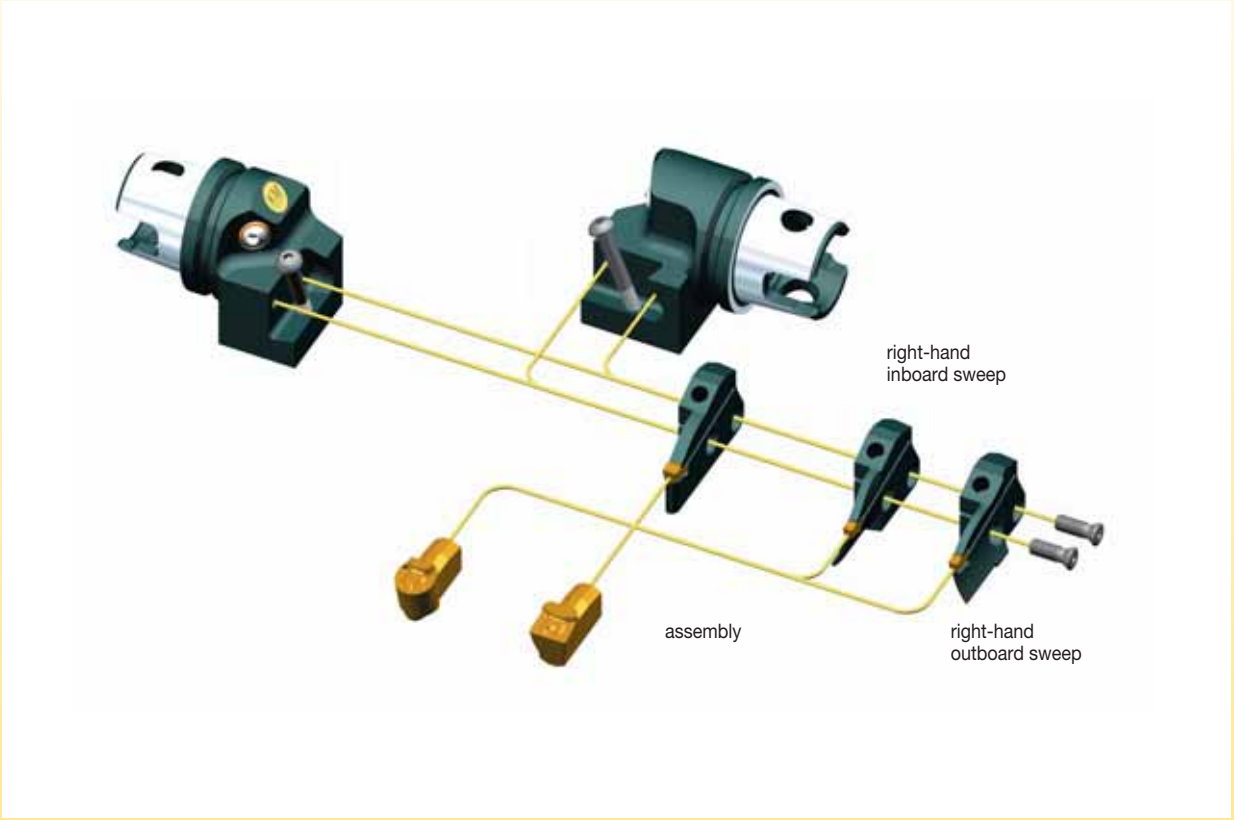
C-KGME

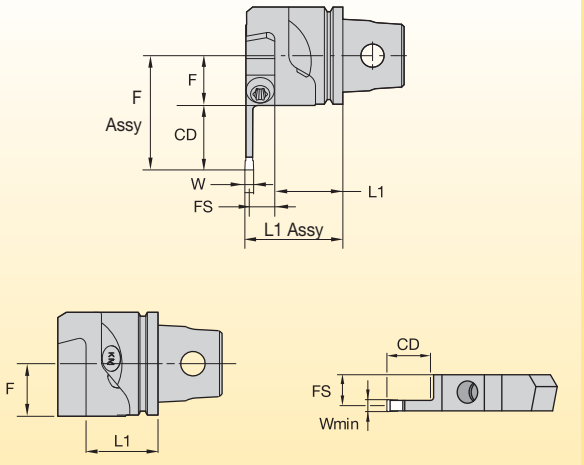
order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756579	**C4KGMER50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**MS2002**	T25
	left hand										
1756583	**C4KGMEL50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**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 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D59–D60.

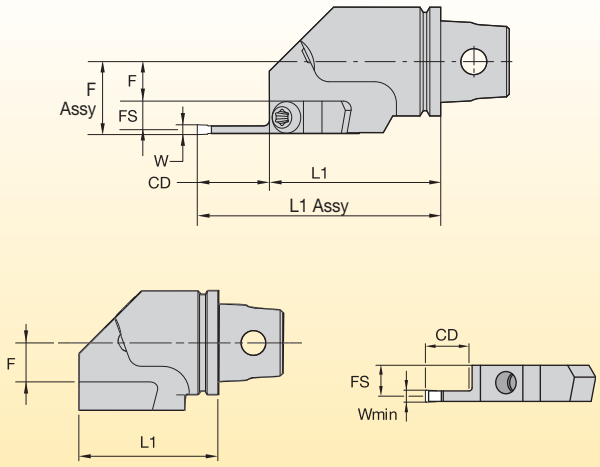
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





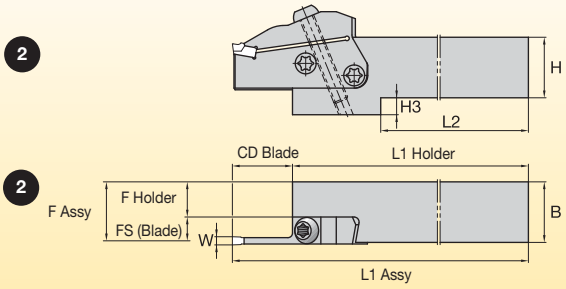
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

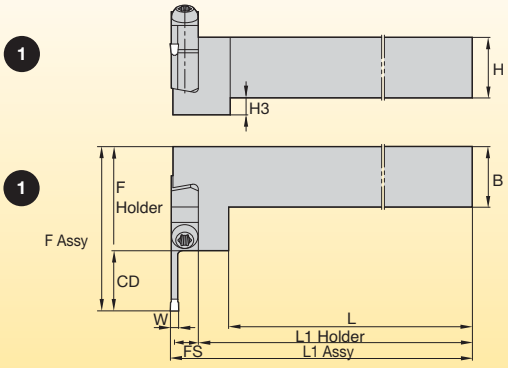
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



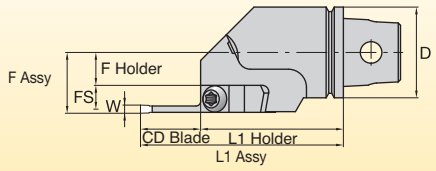
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



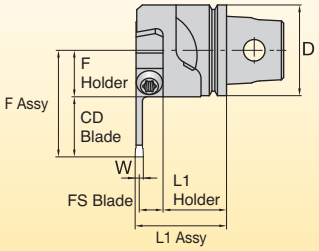
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



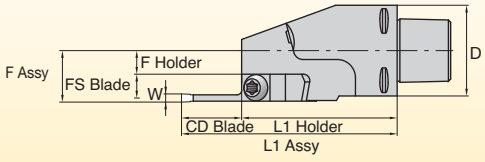
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



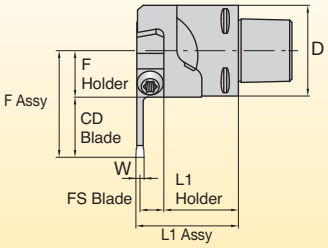
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

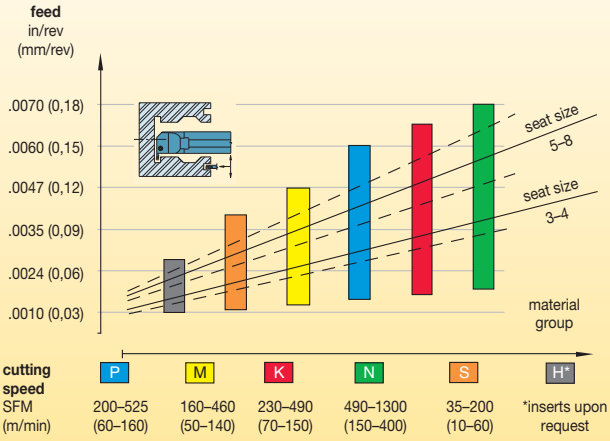
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

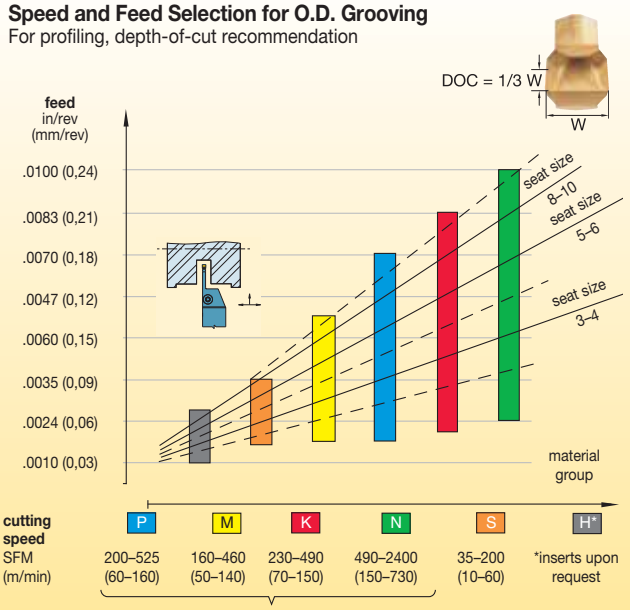
Application Guidelines

Speed and Feed Selection for I.D. and Face Grooving



Speed and Feed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

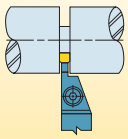


For radial grooving under stable conditions, feed can be increased by up to 50%.

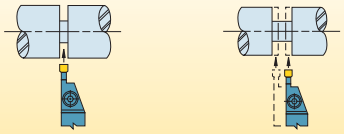
Tool Application Guidelines

- 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

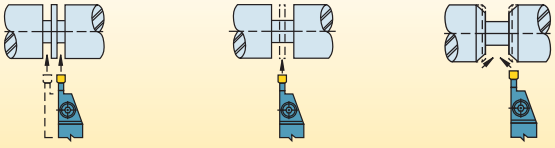


Deep Grooves Slightly Wider than the Tool



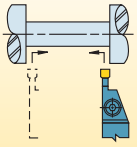
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

Extra-Wide Deep Grooves



1. Plunge out both sides of the groove width.
2. Plunge center area to remove web of remaining material.
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.

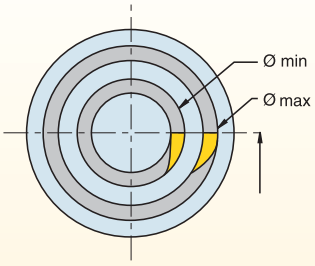
Finish Turning of the Groove/Light Profiling



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.

Grooving Tool Failure and Solution Guide

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

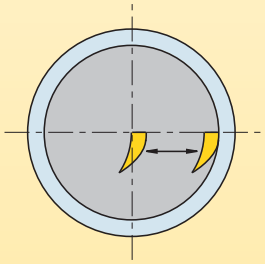
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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 O.D. to the I.D.

Practical Solutions to Grooving Problems

problem	remedy
burr	1. Verify tool center height. 2. Use sharp tools (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 tools (index more often). 3. Dwell time in bottom 1–3 revolutions (max). 4. Use proper chip control geometry. 5. Increase coolant flow. 6. Verify proper setup (overhang, shank size). 7. Use correct geometry (e.g., positive rake for workhardening material).
groove bottom not flat	1. Use sharp tools (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. Verify tool center height.
poor chip control	1. Use sharp tools (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. Verify 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 inserts (index more often).



KM Micro™ Quick Change Tooling System

A smaller, more compact version of the internationally renowned KM™ system.

- Quick-change cutter heads reduce indexing and set-up times by 66%.
- Specially designed for use with automatic and smaller universal lathes.
- Unique flange attachment system increases machine tool capacity.
- KM Micro square shank adapters can be installed quickly and easily in existing tool block adapters.

Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

VG Deep Grooving

Primary Application

The VG Deep-Grooving system is your first choice for productive machining of high-temperature alloys on medium to large lathes.

Features and Benefits

Toolholders

- Rigid bridge clamping system.
- Fast and easy tool change by loosening one screw.
- High-quality standard, close tolerances.

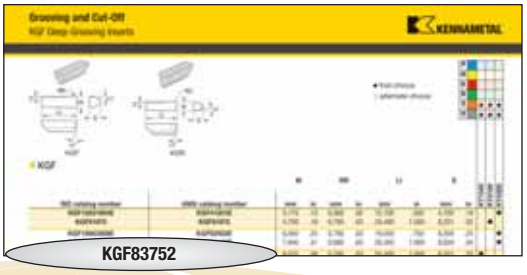
Inserts

- Available in flat top geometries with ground periphery.
- Single-ended styles in industry standard sizes.
- Available in high-performance ceramic grades.



How Do Catalog Numbers Work?

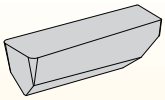
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



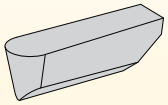
VG Deep-Grooving Inserts

KG	F	8	375	2
Deep Grooving Insert	Groove Style	Insert Length	Width of Groove	Corner Radii, *(KGF only)*

F = Flat



R = Radius



inch = 1/8" increments

metric = millimeters

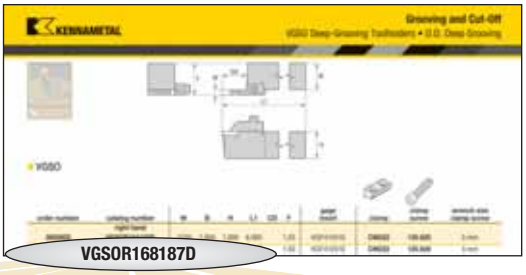
inch = 1/1000"

metric = 1/100mm

symbol		corner radius	
inch	mm	inch	mm
1	04	.02	0,4
2	08	.03	0,8
4	16	.06	1,6

How Do Catalog Numbers Work?

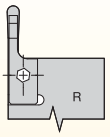
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



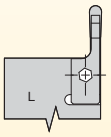
V-Bottom Deep-Grooving Inserts

VG	S	0	R	16	8187	D
V-Bottom Deep Grooving	Tool Style	O.D. Grooving	Hand of Tool	Shank Dimensions	Insert Size	Qualified Surfaces and Length

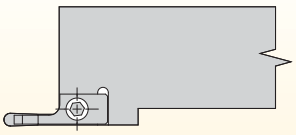
R = Right



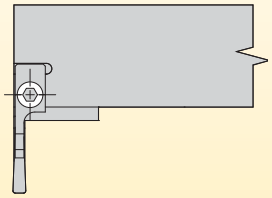
L = Left

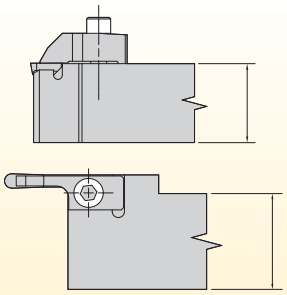


S



E



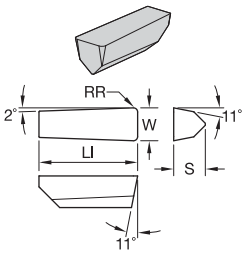


square shanks =
The number indicates the toolholder cross section in 1/16" increments.

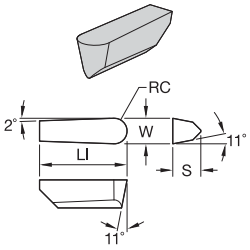
rectangular shanks =
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

D =
Qualified back and end, 6" long

E =
Qualified back and end, 7" long



KGF



KGR

● first choice
○ alternate choice

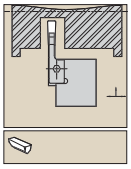
P												
M												
K												
N												
S											●	●
H											●	●

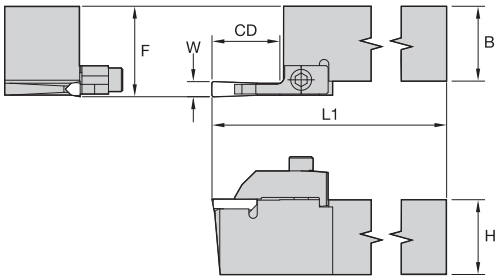
KGF

ISO catalog number	ANSI catalog number	W mm	W in	RR mm	RR in	LI mm	LI in	S mm	S in	KY1540	KY2100	KY4300
KGF12031804E	KGF41251E	3,175	.13	0,380	.02	12,700	.500	4,750	.19			●
KGF81872	KGF81872	4,750	.19	0,790	.03	25,400	1.000	8,331	.33		●	
KGF19063508E	KGF62502E	6,350	.25	0,790	.03	19,050	.750	6,300	.25			●
KGF25079408E	KGF83122E	7,940	.31	0,080	.03	25,400	1.000	8,520	.34			●
KGF25095208E	KGF83752	9,525	.38	0,790	.03	25,400	1.000	8,331	.33	●		
KGF25095208E	KGF83752E	9,525	.38	0,790	.03	25,400	1.000	8,520	.34			●

KGR

ISO catalog number	ANSI catalog number	W mm	W in	RR mm	RR in	LI mm	LI in	S mm	S in	KY1540	KY2100	KY4300
KGR19055628E	KGR6219E	5,563	.22	–	–	19,050	.750	6,096	.24			●
KGR19055628T02020	KGR6219T0820	5,563	.22	–	–	19,050	.750	6,096	.24			●
KGR25079440E	KGR8312E	7,940	.31	–	–	25,400	1.000	8,520	.34			●





VGSO




order number	catalog number	W	B	H	L1	CD	F	gage insert	clamp	clamp screw	wrench size clamp screw
	right hand										
3650822	**VGSOR164125D**	.1250	1.000	1.000	6.000	.75	1.25	KGF41251E	**CM222**	**125.620**	5 mm
3650864	**VGSOR204125E**	.1250	1.250	1.250	7.000	.75	1.50	KGF41251E	**CM222**	**125.620**	5 mm
3650866	**VGSOR244125E**	.1250	1.500	1.500	7.000	.75	2.00	KGF41251E	**CM222**	**125.620**	5 mm
3650868	**VGSOR164156D**	.1563	1.000	1.000	6.000	.75	1.25	KGF41562E	**CM222**	**125.620**	5 mm
3650870	**VGSOR204156E**	.1563	1.250	1.250	7.000	.75	1.50	KGF41562E	**CM222**	**125.620**	5 mm
3650872	**VGSOR244156E**	.1563	1.500	1.500	7.000	.75	2.00	KGF41562E	**CM222**	**125.620**	5 mm
3650874	**VGSOR164187D**	.1870	1.000	1.000	6.000	.75	1.25	KGR4187E	**CM186**	**125.625**	5 mm
1095845	**VGSOR168187D**	.1870	1.000	1.000	6.000	1.06	1.25	KGF81872	**CM186**	**S423**	–
3650876	**VGSOR204187E**	.1870	1.250	1.250	7.000	.75	1.50	KGR4187E	**CM186**	**125.625**	5 mm
3650878	**VGSOR244187E**	.1870	1.500	1.500	7.000	.75	2.00	KGR4187E	**CM186**	**125.625**	5 mm
3650880	**VGSOR206219E**	.2190	1.250	1.250	7.000	1.13	1.50	KGF62191E	**CM220**	**125.625**	5 mm
3650882	**VGSOR246219E**	.2190	1.500	1.500	7.000	1.13	2.00	KGF62191E	**CM220**	**125.625**	5 mm
3650884	**VGSOR206250E**	.2500	1.250	1.250	7.000	1.13	1.50	KGF62502E	**CM220**	**125.625**	5 mm
3650886	**VGSOR246250E**	.2500	1.500	1.500	7.000	1.13	2.00	KGF62502E	**CM220**	**125.625**	5 mm
1015932	**VGSOR248312E**	.3120	1.500	1.500	7.000	1.56	2.00	KGF83122	**CM130**	**S423**	–
3650888	**VGSOR208344E**	.3440	1.250	1.250	7.000	1.50	1.50	KFG83441E	**CM130**	**125.625**	5 mm
3650890	**VGSOR248344E**	.3440	1.500	1.500	7.000	1.50	2.00	KFG83441E	**CM130**	**125.625**	5 mm
1015891	**VGSOR208375E**	.3750	1.250	1.250	7.000	1.56	1.50	KGF83752	**CM130**	**S423**	–
1015933	**VGSOR248375E**	.3750	1.500	1.500	7.000	1.56	2.00	KGF83752	**CM130**	**S423**	–
	left hand										
3650863	**VGSOL164125D**	.1250	1.000	1.000	6.000	.75	1.25	KGF41251E	**CM222**	**125.620**	5 mm
3650865	**VGSOL204125E**	.1250	1.250	1.250	7.000	.75	1.50	KGF41251E	**CM222**	**125.620**	5 mm
3650867	**VGSOL244125E**	.1250	1.500	1.500	7.000	.75	2.00	KGF41251E	**CM222**	**125.620**	5 mm
3650869	**VGSOL164156D**	.1563	1.000	1.000	6.000	.75	1.25	KGF41562E	**CM222**	**125.620**	5 mm
3650871	**VGSOL204156E**	.1563	1.250	1.250	7.000	.75	1.50	KGF41562E	**CM222**	**125.620**	5 mm
3650873	**VGSOL244156E**	.1563	1.500	1.500	7.000	.75	2.00	KGF41562E	**CM222**	**125.620**	5 mm
3650875	**VGSOL164187D**	.1870	1.000	1.000	6.000	.75	1.25	KGR4187E	**CM187**	**125.625**	5 mm
1095846	**VGSOL168187D**	.1870	1.000	1.000	6.000	1.06	1.25	KGF81872	**CM187**	**S423**	–
3650877	**VGSOL204187E**	.1870	1.250	1.250	7.000	.75	1.50	KGR4187E	**CM187**	**125.625**	5 mm
3650879	**VGSOL244187E**	.1870	1.500	1.500	7.000	.75	2.00	KGR4187E	**CM187**	**125.625**	5 mm
3650881	**VGSOL206219E**	.2190	1.250	1.250	7.000	1.13	1.50	KGF62191E	**CM220**	**125.625**	5 mm
3650883	**VGSOL246219E**	.2190	1.500	1.500	7.000	1.13	2.00	KGF62191E	**CM220**	**125.625**	5 mm
3650885	**VGSOL206250E**	.2500	1.250	1.250	7.000	1.13	1.50	KGF62502E	**CM220**	**125.625**	5 mm
3650887	**VGSOL246250E**	.2500	1.500	1.500	7.000	1.13	2.00	KGF62502E	**CM220**	**125.625**	5 mm
1015926	**VGSOL208312E**	.3120	1.250	1.250	7.000	1.56	1.50	KGF83122	**CM131**	**S423**	–
1015958	**VGSOL248312E**	.3120	1.500	1.500	7.000	1.56	2.00	KGF83122	**CM131**	**S423**	–
3650889	**VGSOL208344E**	.3440	1.250	1.250	7.000	1.50	1.50	KFG83441E	**CM131**	**125.625**	5 mm
3650891	**VGSOL248344E**	.3440	1.500	1.500	7.000	1.50	2.00	KFG83441E	**CM131**	**125.625**	5 mm
1015927	**VGSOL208375E**	.3750	1.250	1.250	7.000	1.56	1.50	KGF83752	**CM131**	**S423**	–
1015959	**VGSOL248375E**	.3750	1.500	1.500	7.000	1.56	2.00	KGF83752	**CM131**	**S423**	–



A2™ Cut-Off

High-performance tools to maximize productivity.

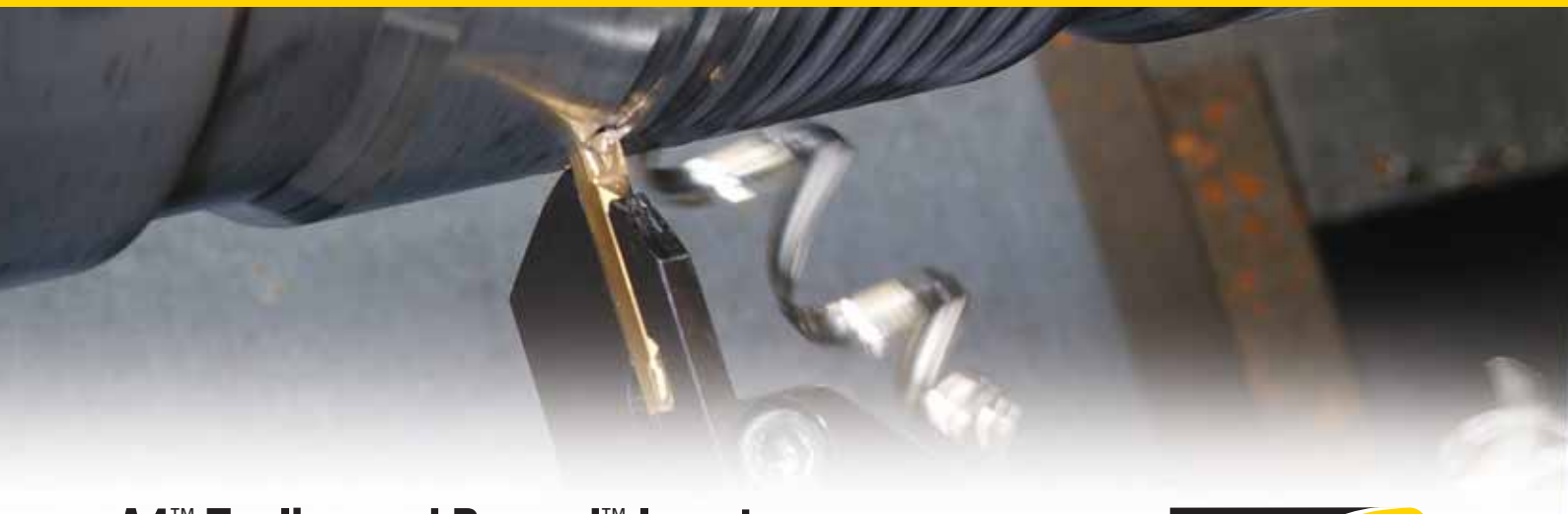
The A2 platform is the ideal system for parting operations on a wide variety of workpiece materials. It works well in smooth and interrupted cuts in both wet and dry operations. Now it is available in KCU25™ for superior edge toughness and excellent wear resistance.

- 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.
- 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.

Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®



A4™ Tooling and Beyond™ Inserts for All Your O.D. and I.D. Applications

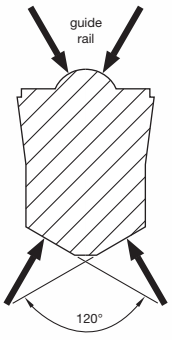
Primary Application

Choose A4 tooling for turning, facing, grooving, face grooving, and cut-off applications across a broad range of workpiece materials. The unique clamping system and versatile insert geometry deliver the highest metal removal rates in the industry.

Features and Benefits

A4 Grooving and Turning System

- One tool for turning, facing, grooving, face-grooving, and cut-off in O.D. and I.D. applications 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!
- 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 chip control in multidirectional turning.



A4 Chipbreakers


GMN Chipbreaker


GMP Chipbreaker


GMN Chipbreaker


GMP Chipbreaker


GUP Chipbreaker



The A4™ System Increases Productivity

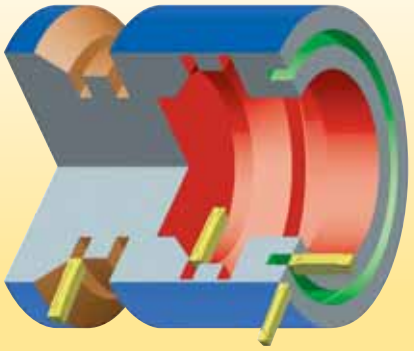
- Covers multiple applications.
- Reduces tool cost.
- Minimizes machining time.

To learn more, ***scan here****.*
For instructions on how to scan, please see page xxix.

Step 1 • Select A4 size for grooving and turning application

What you need to know:

- Groove depth, width, and profile.
- Material being machined.
- Application to be performed (O.D. and I.D. grooving, turning, face grooving, and cut-off).



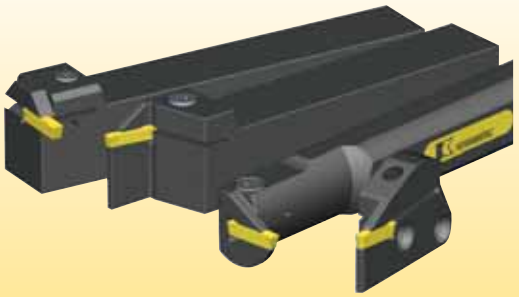
General Recommendation to Select the Insert Size

for workpiece diameters	insert seat size
<25mm	3
25–50mm	4
>50mm	5–10

Step 2 • Select toolholder based on the application

	conventional toolholders	modular blades
O.D. grooving, cut-off, and turning	page D90	page D106
face grooving	page D94	page D107
I.D. grooving, cut-off, and turning	page D95	—

NOTE: Insert seat size must match the seat size of the toolholder.



Step 3 • Select chipbreaker style and feed rate

Choose Chipbreaker Based on Material Type

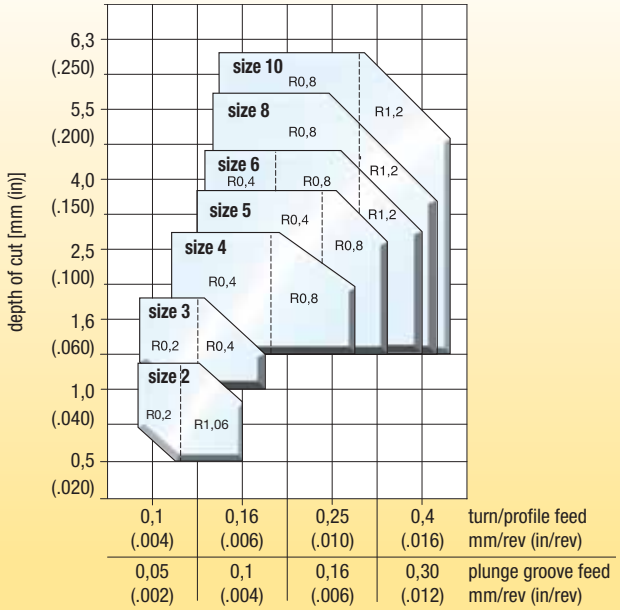
P	M	N	S	H
GMN	GUP/GMP	GUP/GMP precision ground (-E for KD 1405)	GUP/GMP precision ground	GMN

NOTE: Precision ground A4-P-GMN inserts can be applied on all material groups for inch-width grooving.

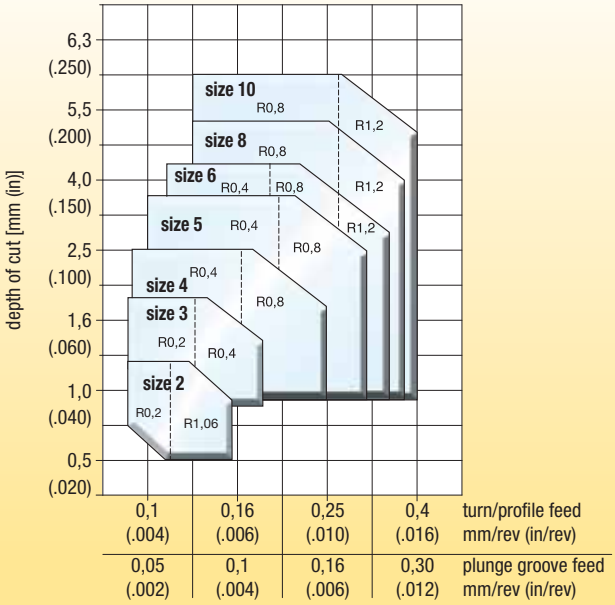
Depth of Cut and Feed Guidelines

square inserts (A4G...)			full radius inserts (A4R...)	
GMN chipbreaker	**GMP chipbreaker**	**GUP chipbreaker**	**GMN chipbreaker**	**GMP chipbreaker**
				
• Groove and turn molded and precision ground inserts. • Stable cutting edge. • Available in metric and inch widths.	• Groove and turn inserts. • Available in molded and precision-ground styles. • Positive rake angle. • Available in metric widths only.	• Groove and turn inserts in new Beyond™ grades. • Available in molded and precision-ground styles. • Positive rake angle with enhanced chip control. • Available in metric widths only.	• Maximum turning and profiling depth of cut equals half the 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.	• Groove and turn inserts. • Available in molded and precision-ground styles. • Positive rake angle. • Available in metric widths only.

GMN



GMP/GUP



NOTE: Select feed based on nose radius.
Diagram explanation: R0,2 - R = corner radius; 0,2 = 0,2mm radius

Step 4 • Select grade and speed

Recommended Beyond™ Grades

cutting condition		P	M	K	N	S	H
heavily interrupted cut		KCU25/KC5025	KCU25/KC5025	KC9125	KCU25/KC5025	KCU25/KC5025	—
lightly interrupted cut		KCP25/KC9125/ KC9125/KCU25/ KC5025	KCU25/KC5025	KC9125	KCU25/KC5025	KCU25/KC5025	—
varying depth of cut, casting, or forging skin		KCU10/KC5010	KCU10/KC5010	KC9110	KCU10/KC5010/ KD1405	K313/KU10/ KCU10/KC5010	KCU10/KC5010
smooth cut, pre-turned surface		KT315/KCP10/ KC9110	KT315	KC9110	KCU10/KC5010/ KD1405	K313/KU10/ KCU10/KC5010	KCU10/KC5010

Recommended Beyond Cutting Speeds

Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	120 (400)	185 (600)	245 (800)	300 (1000)	360 (1200)	m/min	SFM
P	KCU10		◁▷					120	400
	KCP10				◁▷			275	900
	KCP25			◁▷				220	725
	KC5025		◁▷					120	400
	KC9110				◁▷			250	800
	KC9125			◁▷				200	650
	KT315**					◁▷		260	850

**KT315 is an alternative choice for steel; primarily available in the GMP chipbreaker.

Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	45 (150)	90 (300)	140 (450)	185 (600)	230 (750)	275 (900)	m/min	SFM
M	KU10	◁▷						55	185
	KCU10			◁▷				140	465
	KCU25		◁▷					110	365
	KC5010			◁▷				135	450
	KC5025		◁▷					105	350
	KT315				◁▷			170	400

Non-Ferrous Metals — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	150 (500)	300 (1000)	460 (1500)	610 (2000)	760 (2500)	900 (3000)	m/min	SFM
N	KC5025		◁▷					365	1200
	KC5010			◁▷				455	1500
	KD1405***				◁▷			610	2000

***Recommended for high-silicon aluminum alloys and abrasive nonmetallics.

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (60)	35 (120)	55 (180)	75 (240)	90 (300)	140 (450)	m/min	SFM
S	KU10	◁▷						22	75
	KCU10				◁▷			65	220
	KCU25			◁▷				50	160
	KC5010				◁▷			60	200
	KC5025			◁▷				45	150
	KT315		◁▷					30	100

Hardened Materials — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (60)	35 (120)	55 (180)	75 (240)	95 (300)	115 (360)	m/min	SFM
H	KC5010		◁▷					30	100

Step 5 • Select insert and holder from catalog page

NOTE: The insert seat size must match the seat size of your toolholder selection.

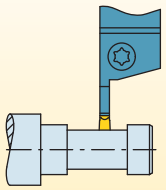
Example for A4 — Groove and Turn

Material.....low-alloyed steel
Workpiece O.D. .....1.5" (38mm)
Groove depth.....5" (12mm)
Groove width ..... .850" (22mm)
Lightly interrupted cut

Recommendation

Insert A4G0405M04U08GMN
Grade KC9125
Insert width 4,05mm
Insert seat size 4

Toolholder A4SMR160417
Grooving depth..... .670" (17mm)
Seat size 4



Speed: 650 SFM (200 m/min)
Feed: .010 in/rev (0,25 mm/rev)
Plunge feed: .006 in/rev (0,14 mm/rev)

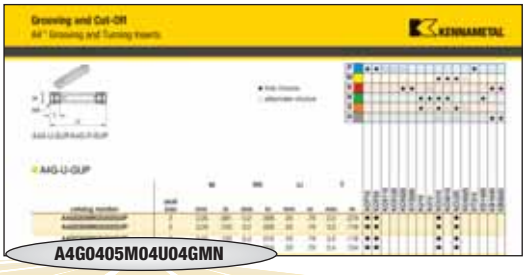
Congratulations!

You have successfully maximized your productivity by selecting the best A4 insert geometry, grade, and cutting specifications for your application!



How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Grooving and Turning Inserts

A4	G	0405	M	04	U	04	GMN
Tooling System	Insert Type	Groove Width	Unit of Measurement for Grooving Width	Seat Size	Insert Tolerance	Corner Radii	Chipbreaker Type/Edge Prep
A4 = Grooving and Turning	**G** = Square **R** = Full radius **C** = Cut-off	Expressed in 1/100mm or .00"	**M** = Metric **N** = Inch				

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
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
2S	2,00–2,62
3S	3,00–3,05
4S	4,00–4,05
5S	5,00–5,05

P = Precision ground
grooving width tolerance:
± .001" (0,025mm)

U = Utility molded
grooving width tolerance:

3,05-4,05:	+ .006" / -0	(+0,15mm) / -0
5,05-10,05:	+ .010" / -0	(+0,25mm) / -0

inch	mm
0 = .004	**01** = 0,1
05 = .008	**02** = 0,2
1 = .016	**04** = 0,4
2 = .032	**08** = 0,8
3 = .047	**12** = 1,2

full radius = 00

GMN =
Grooving and turning medium machining stable cutting edge

GMP =
Grooving and turning medium machining positive rake angle

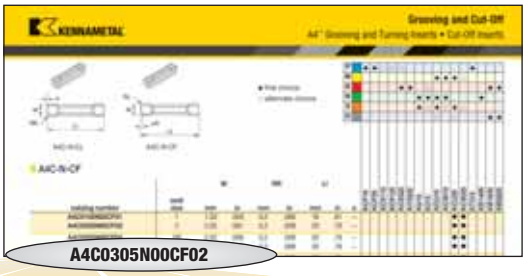
GUP =
Grooving and turning high positive geometry. Especially in stainless steels and high-temp alloys

B =
Flat top for special forms and applications

E =
Flat top, slight honed edge

S =
Negative land plus hone

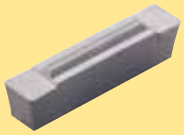
ST =
Single tip

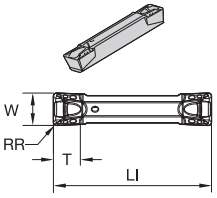


Cut-Off Inserts

A4	C	0305	N	00	CF	02
Tooling System	Insert Type	Cutting Width	Hand of Insert	Main Cutting Edge Lead Angle	Chipbreaker Type	Corner Radius
A4 = Grooving and Turning	**C** = Cut-off	Expressed in 1/100mm	**R** = Right hand **L** = Left hand **N** = Neutral	**00** = Neutral **06** = 6° **10** = 10°	**CF** = Cut-off fine positive rake	

inch	mm
.008	02 = 0,2

insert type and chipbreaker designation		application range	metric widths (mm)	inch widths (in)	P	M	N	S	H
Molded: A4G-U-GUP		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility molded.	2–10	—	●	●	●	●	○
Precision Ground: A4G-P-GUP		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± .001" (0,025mm) width tolerance.	2–10	—	●	●	●	●	○
Molded: A4G-U-GMN		Groove and 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" (0,025mm) width tolerance.	—	.125–.375	●	○	○	○	●
Molded: A4G-U-GMP		Groove and 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" (0,025mm) width tolerance.	3–10	—		○	●	●	
Molded: A4R-U-GMN		Groove and 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" (0,025mm) width tolerance.	—	.125–.375	●	○	○	○	●
Precision Ground: A4R-P-GMP		Groove and Turn: • Positive rake angle. • Precision ground cutting edge. • ± .001" (0,025mm) width tolerance.	3–10	—		●	●	●	
Molded: A4G-U-B		Groove and Turn: • For special profiles and for PCBN-tipped inserts (by request only). • Secondary choice for cast iron and high-temp alloys.	3,05–10,05	—				○	
Precision Ground: A4G-P-E-PCD		• Diamond sheet-tipped tool for high-performance non-ferrous machining.	3–5	—			●		
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	—	●	●	●	●	



A4G-U-GUP/A4G-P-GUP

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○							●				
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GUP

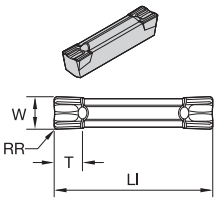
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0205M02U02GUP	2	2,05	.081	0,2	.008	20	.79	2,0	.079
A4G0305M03U02GUP	3	3,05	.120	0,2	.008	20	.79	3,0	.118
A4G0305M03U04GUP	3	3,05	.120	0,4	.016	20	.79	3,0	.118
A4G0405M04U04GUP	4	4,05	.159	0,4	.016	20	.79	3,4	.134
A4G0405M04U08GUP	4	4,05	.159	0,8	.031	20	.79	3,4	.134
A4G0505M05U04GUP	5	5,05	.199	0,4	.016	25	.99	4,2	.165
A4G0505M05U08GUP	5	5,05	.199	0,8	.031	25	.99	4,2	.165
A4G0605M06U04GUP	6	6,05	.238	0,4	.016	30	1.19	4,5	.177
A4G0605M06U08GUP	6	6,05	.238	0,8	.031	30	1.19	4,5	.177
A4G0605M06U12GUP	6	6,05	.238	1,2	.047	30	1.19	4,5	.177
A4G0805M08U08GUP	8	8,05	.317	0,8	.031	30	1.19	6,0	.236
A4G0805M08U12GUP	8	8,05	.317	1,2	.047	30	1.19	6,0	.236
A4G1005M10U08GUP	10	10,05	.396	0,8	.031	30	1.19	6,0	.236
A4G1005M10U12GUP	10	10,05	.396	1,2	.047	30	1.19	6,1	.238

catalog number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GUP	●	●							●		●					
A4G0305M03U02GUP	●	●							●		●					
A4G0305M03U04GUP	●	●							●		●					
A4G0405M04U04GUP	●	●							●		●					
A4G0405M04U08GUP	●	●							●		●					
A4G0505M05U04GUP	●	●							●		●					
A4G0505M05U08GUP	●	●							●		●					
A4G0605M06U04GUP	●	●							●		●					
A4G0605M06U08GUP	●	●							●		●					
A4G0605M06U12GUP	●	●							●		●					
A4G0805M08U08GUP	●	●							●		●					
A4G0805M08U12GUP	●	●							●		●					
A4G1005M10U08GUP	●	●							●		●					
A4G1005M10U12GUP	●	●							●		●					

A4G-P-GUP

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0200M02P02GUP	2	2,00	.079	0,2	.008	20	.79	1,9	.075
A4G0300M03P02GUP	3	3,00	.118	0,2	.008	20	.79	2,9	.115
A4G0300M03P04GUP	3	3,00	.118	0,4	.016	20	.79	2,9	.115
A4G0400M04P02GUP	4	4,00	.157	0,2	.008	20	.79	3,3	.130
A4G0400M04P04GUP	4	4,00	.157	0,4	.016	20	.79	3,3	.130
A4G0400M04P08GUP	4	4,00	.157	0,8	.031	20	.79	3,3	.130
A4G0500M05P04GUP	5	5,00	.197	0,4	.016	25	.98	4,1	.163
A4G0500M05P08GUP	5	5,00	.197	0,8	.031	25	.98	4,1	.163
A4G0600M06P04GUP	6	6,00	.236	0,4	.016	30	1.18	4,5	.176
A4G0600M06P08GUP	6	6,00	.236	0,8	.031	30	1.18	4,5	.176
A4G0800M08P08GUP	8	8,00	.315	0,8	.031	30	1.18	6,0	.235
A4G0800M08P12GUP	8	8,00	.315	1,2	.047	30	1.18	6,0	.235
A4G094I2BP05GUP	2B	2,38	.094	0,2	.008	20	.79	1,9	.075
A4G1000M10P08GUP	10	10,00	.394	0,8	.031	30	1.18	6,0	.235
A4G1000M10P12GUP	10	10,00	.394	1,2	.047	30	1.18	6,0	.235
A4G125I03P05GUP	3	3,18	.125	0,2	.008	20	.79	2,9	.115
A4G125I03P1GUP	3	3,18	.125	0,4	.016	20	.79	2,9	.115
A4G187I04P1GUP	4	4,76	.187	0,4	.016	20	.79	3,3	.130
A4G187I04P2GUP	4	4,76	.187	0,8	.033	20	.79	3,3	.130
A4G250I06P1GUP	6	6,35	.250	0,4	.016	30	1.18	4,4	.175
A4G250I06P2GUP	6	6,35	.250	0,8	.031	30	1.18	4,4	.175
A4G312I08P1GUP	8	7,94	.312	0,4	.016	30	1.18	5,9	.233
A4G375I10P1GUP	10	9,53	.375	0,4	.016	30	1.18	5,9	.233
A4G375I10P2GUP	10	9,52	.375	0,8	.032	30	1.18	5,9	.234

catalog number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GUP							●		●		●					
A4G0300M03P02GUP							●		●		●					
A4G0300M03P04GUP							●		●		●					
A4G0400M04P02GUP							●		●		●					
A4G0400M04P04GUP							●		●		●					
A4G0400M04P08GUP							●		●		●					
A4G0500M05P04GUP							●		●		●					
A4G0500M05P08GUP							●		●		●					
A4G0600M06P04GUP							●		●		●					
A4G0600M06P08GUP							●		●		●					
A4G0800M08P08GUP							●		●		●					
A4G0800M08P12GUP							●		●		●					
A4G094I2BP05GUP											●					
A4G1000M10P08GUP							●		●		●					
A4G1000M10P12GUP							●		●		●					
A4G125I03P05GUP											●					
A4G125I03P1GUP											●					
A4G187I04P1GUP											●					
A4G187I04P2GUP											●					
A4G250I06P1GUP											●					
A4G250I06P2GUP											●					
A4G312I08P1GUP											●					
A4G375I10P1GUP											●					
A4G375I10P2GUP											●					



A4G-U-GMP/A4G-P-GMP

● first choice
○ alternate choice

	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

A4G-U-GMP

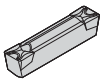
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0205M02U02GMP	2	2,05	.081	0,2	.008	20	.79	2,0	.079
A4G0255M2BU02GMP	2B	2,62	.103	0,2	.008	20	.79	2,0	.079
A4G0305M03U02GMP	3	3,05	.120	0,2	.008	20	.79	3,5	.138
A4G0305M03U04GMP	3	3,05	.120	0,4	.016	20	.79	3,5	.138
A4G0405M04U04GMP	4	4,05	.159	0,4	.016	20	.79	3,5	.138
A4G0405M04U08GMP	4	4,05	.159	0,8	.031	20	.79	3,5	.138
A4G0505M05U04GMP	5	5,05	.199	0,4	.016	25	.99	4,2	.165
A4G0505M05U08GMP	5	5,05	.199	0,8	.031	25	.99	4,2	.165
A4G0605M06U04GMP	6	6,05	.238	0,4	.016	30	1.19	4,9	.193
A4G0605M06U08GMP	6	6,05	.238	0,8	.031	30	1.19	4,9	.193
A4G0605M06U12GMP	6	6,05	.238	1,2	.047	30	1.19	4,9	.193
A4G0805M08U08GMP	8	8,05	.317	0,8	.031	30	1.19	6,4	.252
A4G0805M08U12GMP	8	8,05	.317	1,2	.047	30	1.19	6,4	.252
A4G1005M10U08GMP	10	10,05	.396	0,8	.031	30	1.19	8,1	.319
A4G1005M10U12GMP	10	10,05	.396	1,2	.047	30	1.19	8,1	.319

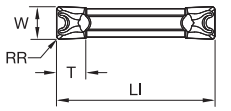
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A4G0305M03U04GMP			●	●					●	●	●	●	●			
A4G0405M04U04GMP			●	●					●	●	●	●	●			
A4G0405M04U08GMP			●	●					●	●	●	●	●			
A4G0505M05U04GMP			●	●					●	●	●	●				
A4G0505M05U08GMP			●	●					●	●	●	●	●			
A4G0605M06U04GMP			●	●					●	●	●	●				
A4G0605M06U08GMP			●	●					●	●	●	●	●			
A4G0605M06U12GMP									●	●		●				
A4G0805M08U08GMP			●	●							●	●				
A4G0805M08U12GMP												●				
A4G1005M10U08GMP									●	●	●	●				
A4G1005M10U12GMP				●								●				

A4G-P-GMP

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0200M02P02GMP	2	2,00	.079	0,2	.008	20	.79	2,0	.079
A4G0250M2BP02GMP	2B	2,50	.098	0,2	.008	20	.79	2,0	.079
A4G0300M03P02GMP	3	3,00	.118	0,2	.008	20	.79	3,5	.138
A4G0300M03P04GMP	3	3,00	.118	0,4	.016	20	.79	3,5	.138
A4G0400M04P02GMP	4	4,00	.157	0,2	.008	20	.79	3,5	.138
A4G0400M04P04GMP	4	4,00	.157	0,4	.016	20	.79	3,5	.138
A4G0400M04P08GMP	4	4,00	.157	0,8	.031	20	.79	3,5	.138
A4G0500M05P04GMP	5	5,00	.197	0,4	.016	25	.98	4,2	.165
A4G0500M05P08GMP	5	5,00	.197	0,8	.031	25	.98	4,2	.165
A4G0600M06P04GMP	6	6,00	.236	0,4	.016	30	1.18	4,8	.190
A4G0600M06P08GMP	6	6,00	.236	0,8	.031	30	1.18	4,8	.190
A4G0800M08P08GMP	8	8,00	.315	0,8	.031	30	1.18	6,3	.249
A4G0800M08P12GMP	8	8,00	.315	1,2	.047	30	1.18	6,3	.249
A4G1000M10P08GMP	10	10,00	.394	0,8	.031	30	1.18	8,0	.316
A4G1000M10P12GMP	10	10,00	.394	1,2	.047	30	1.18	8,0	.316

catalog number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GMP									●	●	●	●				
A4G0250M2BP02GMP									●	●						
A4G0300M03P02GMP								●	●	●	●	●				
A4G0300M03P04GMP								●	●	●	●	●				
A4G0400M04P02GMP								●	●	●	●	●				
A4G0400M04P04GMP								●	●	●	●	●				
A4G0400M04P08GMP									●	●	●	●				
A4G0500M05P04GMP								●	●	●	●	●				
A4G0500M05P08GMP								●	●	●	●	●				
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A4G0600M06P08GMP									●	●	●	●				
A4G0800M08P08GMP								●	●	●	●	●				
A4G0800M08P12GMP									●	●						
A4G1000M10P08GMP								●	●	●	●	●				
A4G1000M10P12GMP									●	●						





A4G-U-GMN/A4G-P-GMN

● first choice
○ alternate choice

	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

A4G-U-GMN

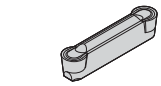
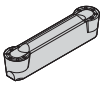
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0205M02U02GMN	2	2,05	.081	0,2	.008	20	.79	2,0	.079
A4G0255M2BU02GMN	2B	2,62	.103	0,2	.008	20	.79	2,0	.079
A4G0305M03U02GMN	3	3,05	.120	0,2	.008	20	.79	3,5	.138
A4G0305M03U04GMN	3	3,05	.120	0,4	.016	20	.79	3,5	.138
A4G0405M04U04GMN	4	4,05	.159	0,4	.016	20	.79	3,5	.138
A4G0405M04U08GMN	4	4,05	.159	0,8	.031	20	.79	3,5	.138
A4G0505M05U04GMN	5	5,05	.199	0,4	.016	25	.98	4,2	.165
A4G0505M05U08GMN	5	5,05	.199	0,8	.031	25	.98	4,2	.165
A4G0605M06U04GMN	6	6,05	.238	0,4	.016	30	1.18	4,9	.193
A4G0605M06U08GMN	6	6,05	.238	0,8	.031	30	1.18	4,9	.193
A4G0605M06U12GMN	6	6,05	.238	1,2	.047	30	1.18	4,9	.193
A4G0805M08U08GMN	8	8,05	.317	0,8	.031	30	1.18	6,4	.252
A4G0805M08U12GMN	8	8,05	.317	1,2	.047	30	1.18	6,4	.252
A4G1005M10U08GMN	10	10,05	.396	0,8	.031	30	1.18	8,1	.319
A4G1005M10U12GMN	10	10,05	.396	1,2	.047	30	1.18	8,1	.319

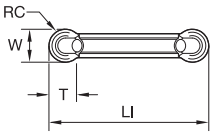
catalog number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GMN			●						●	●	●	●				
A4G0255M2BU02GMN			●							●		●				
A4G0305M03U02GMN			●	●					●	●	●	●				
A4G0305M03U04GMN			●	●					●	●	●	●				
A4G0405M04U04GMN			●	●					●	●	●	●				
A4G0405M04U08GMN			●	●					●	●	●	●				
A4G0505M05U04GMN			●	●					●	●	●	●				
A4G0505M05U08GMN			●	●					●	●	●	●				
A4G0605M06U04GMN			●	●					●	●	●	●				
A4G0605M06U08GMN			●	●					●	●	●	●				
A4G0605M06U12GMN				●					●	●	●	●				
A4G0805M08U08GMN			●	●					●	●	●	●				
A4G0805M08U12GMN			●	●					●	●	●	●				
A4G1005M10U08GMN			●	●							●	●				
A4G1005M10U12GMN			●	●								●				

A4G-P-GMN

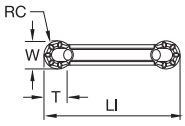
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G094I2BP05GMN	2B	2,39	.094	0,2	.008	20	.79	1,9	.075
A4G125I03P05GMN	3	3,18	.125	0,2	.008	20	.79	3,4	.134
A4G125I03P1GMN	3	3,18	.125	0,4	.016	20	.79	3,4	.134
A4G187I04P1GMN	4	4,76	.187	0,4	.016	20	.79	3,5	.138
A4G187I04P2GMN	4	4,76	.187	0,8	.031	20	.79	3,5	.138
A4G250I06P1GMN	6	6,35	.250	0,4	.016	30	1.18	4,7	.187
A4G250I06P2GMN	6	6,35	.250	0,8	.031	30	1.18	4,7	.187
A4G312I08P1GMN	8	7,94	.312	0,4	.016	30	1.18	6,2	.246
A4G312I08P2GMN	8	7,94	.312	0,8	.031	30	1.18	6,2	.246
A4G375I10P1GMN	10	9,53	.375	0,4	.016	30	1.18	7,9	.312
A4G375I10P2GMN	10	9,53	.375	0,8	.031	30	1.18	7,9	.313

catalog number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G094I2BP05GMN									●	●						
A4G125I03P05GMN									●	●	●	●				
A4G125I03P1GMN									●	●	●	●				
A4G187I04P1GMN									●	●	●	●				
A4G187I04P2GMN									●	●	●	●				
A4G250I06P1GMN									●	●	●	●				
A4G250I06P2GMN									●	●	●	●				
A4G312I08P1GMN										●	●	●				
A4G312I08P2GMN												●				
A4G375I10P1GMN										●						
A4G375I10P2GMN									●	●	●	●				



A4R-P-GMP



A4R-U-GMN/A4R-P-GMN

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4R-P-GMP

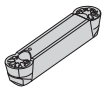
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in
A4R0200M02P00GMP	2	2,00	.079	1,0	.039	20	.79	1,7	.067
A4R0300M03P00GMP	3	3,00	.118	1,5	.059	20	.79	2,5	.099
A4R0400M04P00GMP	4	4,00	.157	2,0	.079	20	.79	3,4	.134
A4R0500M05P00GMP	5	5,00	.197	2,5	.098	25	.99	4,1	.161
A4R0600M06P00GMP	6	6,00	.236	3,0	.118	30	1.18	4,9	.192
A4R0800M08P00GMP	8	8,00	.315	4,0	.158	30	1.18	6,5	.256
A4R1000M10P00GMP	10	10,00	.394	5,0	.197	30	1.18	8,1	.319

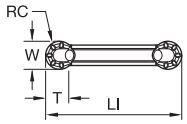
A4R-U-GMN

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in
A4R0205M02U00GMN	2	2,05	.081	1,1	.042	20	.79	1,8	.069
A4R0305M03U00GMN	3	3,05	.120	1,5	.060	20	.79	2,6	.101
A4R0405M04U00GMN	4	4,05	.159	2,0	.080	20	.79	3,4	.134
A4R0505M05U00GMN	5	5,05	.199	2,5	.099	25	.99	4,1	.161
A4R0605M06U00GMN	6	6,05	.238	3,0	.119	30	1.19	4,9	.193
A4R0805M08U00GMN	8	8,05	.317	4,0	.159	30	1.19	6,5	.256
A4R1005M10U00GMN	10	10,05	.396	5,0	.198	30	1.19	8,1	.319

A4R-P-GMN

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in
A4R125I03P00GMN	3	3,18	.125	1,6	.063	20	.79	2,7	.107
A4R187I04P00GMN	4	4,76	.187	2,4	.094	20	.79	3,8	.149
A4R250I06P00GMN	6	6,35	.250	3,2	.125	30	1.18	5,2	.204
A4R312I08P00GMN	8	7,94	.312	4,0	.156	30	1.18	6,4	.250
A4R375I10P00GMN	10	9,53	.375	4,8	.188	30	1.18	7,3	.289





A4R-P-GUP/A4R-U-GUP

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4R-P-GUP

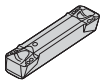
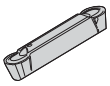
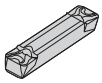
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in
A4R0300M03P00GUP	3	3,00	.118	1,5	.059	20	.79
A4R0400M04P00GUP	4	4,00	.157	2,0	.079	20	.79
A4R0500M05P00GUP	5	5,00	.197	2,5	.098	25	.98
A4R0600M06P00GUP	6	6,00	.236	3,0	.118	30	1.18
A4R0800M08P00GUP	8	8,00	.315	4,0	.158	30	1.18
A4R1000M10P00GUP	10	10,00	.394	5,0	.197	30	1.18
A4R125I03P00GUP	3	3,18	.125	1,6	.063	20	.79
A4R187I04P00GUP	4	4,76	.188	2,4	.094	20	.79
A4R250I06P00GUP	6	6,35	.250	3,2	.125	30	1.18
A4R312I08P00GUP	8	7,94	.312	4,0	.156	30	1.18
A4R375I10P00GUP	10	9,52	.375	4,8	.188	30	1.18

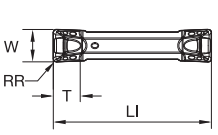
KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
										●					
										●					
										●					
										●					
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										●					
										●					

A4R-U-GUP

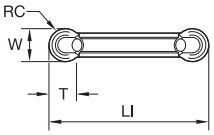
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in
A4R0305M03U00GUP	3	3,05	.120	1,5	.060	20	.79
A4R0505M05U00GUP	5	5,05	.199	2,5	.099	25	.99
A4R1005M10U00GUP	10	10,05	.396	5,0	.198	30	1.19

KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
										●					
										●					
										●					

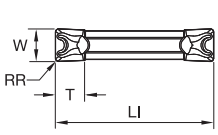






A4G-SU-GUP/A4G-SP-GUP



A4R-SP-GMP



A4G-SU-GMN

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-SU-GUP • Small Diameter Face Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0205M2SU02GUP	2S	2,05	.081	0,2	.008	20	.79	2,0	.079
A4G0305M3SU02GUP	3S	3,05	.120	0,2	.008	20	.79	3,0	.118
A4G0305M3SU04GUP	3S	3,05	.120	0,4	.016	20	.79	3,0	.118
A4G0405M4SU04GUP	4S	4,05	.159	0,4	.016	20	.79	3,4	.134
A4G0405M4SU08GUP	4S	4,05	.159	0,8	.031	20	.79	3,4	.134
A4G0505M5SU04GUP	5S	5,05	.199	0,4	.016	25	.99	4,2	.165
A4G0505M5SU08GUP	5S	5,05	.199	0,8	.031	25	.99	4,2	.165

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

A4G-SP-GUP • Small Diameter Face Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0200M2SP02GUP	2S	2,00	.079	0,2	.008	20	.79	1,9	.075
A4G0300M3SP02GUP	3S	3,00	.118	0,2	.008	20	.79	2,9	.115
A4G0300M3SP04GUP	3S	3,00	.118	0,4	.016	20	.79	2,9	.115
A4G0400M4SP04GUP	4S	4,00	.157	0,4	.016	20	.79	3,4	.132
A4G0400M4SP08GUP	4S	4,00	.157	0,8	.031	20	.79	3,4	.132
A4G0500M5SP04GUP	5S	5,00	.197	0,4	.016	25	.98	4,1	.163
A4G0500M5SP08GUP	5S	5,00	.197	0,8	.031	25	.98	4,1	.163

NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

A4R-SP-GMP • Small Diameter Face Grooving

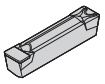
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in
A4R0200M2SP00GMP	2S	2,00	.079	1,0	.039	20	.79	1,7	.067
A4R0300M3SP00GMP	3S	3,00	.118	1,5	.059	20	.79	2,5	.099
A4R0400M4SP00GMP	4S	4,00	.157	2,0	.079	20	.79	3,4	.134
A4R0500M5SP00GMP	5S	5,00	.197	2,5	.098	25	.98	4,1	.161

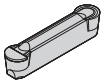
NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

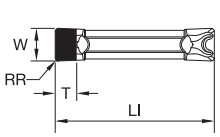
A4G-SU-GMN • Small Diameter Face Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0205M2SU02GMN	2S	2,05	.081	0,2	.008	20	.79	2,0	.079
A4G0305M3SU02GMN	3S	3,05	.120	0,2	.008	20	.79	3,5	.138
A4G0305M3SU04GMN	3S	3,05	.120	0,4	.016	20	.79	3,5	.138
A4G0405M4SU04GMN	4S	4,05	.159	0,4	.016	20	.79	3,6	.143
A4G0405M4SU08GMN	4S	4,05	.159	0,8	.031	20	.79	3,6	.143
A4G0505M5SU04GMN	5S	5,05	.199	0,4	.016	25	.98	4,2	.165
A4G0505M5SU08GMN	5S	5,05	.199	0,8	.031	25	.98	4,2	.166

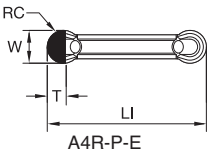
NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.







A4G-P-E



A4R-P-E

● first choice
○ alternate choice

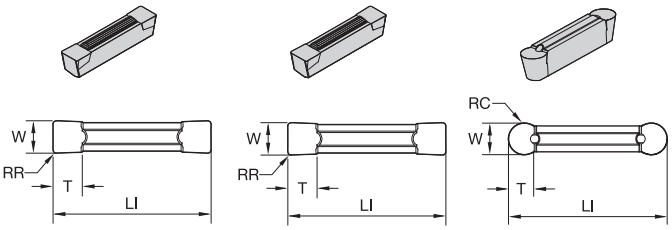
		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-P-E • PCD Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0300M03P04E	3	3,00	.118	0,4	.016	20	.79	3,5	.138
A4G0400M04P04E	4	4,00	.157	0,4	.016	20	.79	3,5	.138
A4G0500M05P08E	5	5,00	.197	0,8	.031	25	.98	4,2	.165

A4R-P-E • PCD Grooving

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in
A4R0500M05P00E	5	5,00	.197	2,5	.099	25	.98	4,1	.161



A4G-U-B | A4G-P-T | A4R-P-T

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-B

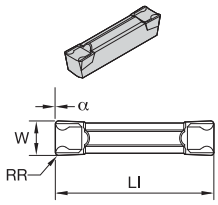
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0305M03U02B	3	3,05	.120	0,2	.008	20	.79	3,5	.138					●						●	●				
A4G0405M04U04B	4	4,05	.159	0,4	.016	20	.79	3,4	.134					●							●				
A4G0505M05U04B	5	5,05	.199	0,4	.016	25	.98	4,2	.165					●						●	●				
A4G0605M06U04B	6	6,05	.238	0,4	.016	30	1.18	4,9	.193					●						●	●				
A4G0805M08U08B	8	8,05	.317	0,8	.031	30	1.18	6,4	.252					●											
A4G1005M10U08B	10	10,05	.396	0,8	.031	30	1.18	8,1	.319					●											

A4G-P-T

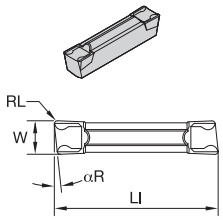
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0300M03P04T01025	3	3,00	.118	0,4	.016	20	.79	3,4	.134						●										
A4G125I03P1T0425	3	3,18	.125	0,4	.016	20	.79	3,4	.134						●										
A4G0400M04P04T01025	4	4,00	.157	0,4	.016	20	.79	3,4	.134						●										
A4G187I04P2T0425	4	4,76	.187	0,8	.031	20	.79	3,4	.134						●										
A4G0500M05P08T01025	5	5,00	.197	0,8	.031	25	.98	4,2	.165						●										
A4G0600M06P08T01025	6	6,00	.236	0,8	.031	30	1.18	4,8	.189						●										
A4G250I06P2T0425	6	6,35	.250	0,8	.031	30	1.18	4,9	.193						●										
A4G0800M08P08T01025	8	8,00	.315	0,8	.031	30	1.18	6,4	.250						●										

A4R-P-T

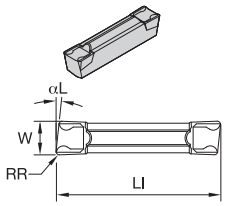
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0300M03P00T01025	3	3,00	.118	1,5	.059	20	.79	2,4	.095						●										
A4R125I03P00T0425	3	3,18	.125	1,6	.062	20	.79	2,6	.100						●										
A4R0400M04P00T01025	4	4,00	.157	2,0	.079	20	.79	3,0	.117						●										
A4R187I04P00T0425	4	4,76	.187	2,4	.094	20	.79	4,3	.169						●										
A4R0500M05P00T01025	5	5,00	.197	2,5	.098	25	.98	4,1	.163						●										
A4R0600M06P00T01025	6	6,00	.236	3,0	.118	30	1.18	4,3	.171						●										
A4R250I06P00T0425	6	6,35	.250	3,2	.125	30	1.18	4,8	.191						●										
A4R0800M08P00T01025	8	8,00	.315	4,0	.157	30	1.18	6,4	.250						●										



A4C-N-CF



A4C-R-CF



A4C-L-CF

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4C-N-CF

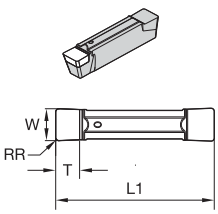
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	α
A4C0155N00CF01	1	1,50	.059	0,2	.006	16	.61	—
A4C0205N00CF02	2	2,05	.081	0,2	.008	20	.79	—
A4C0255N00CF02	2B	2,50	.098	0,2	.008	20	.79	—
A4C0305N00CF02	3	3,05	.120	0,2	.008	20	.79	—
A4C0405N00CF02	4	4,05	.159	0,2	.008	20	.79	—

A4C-R-CF

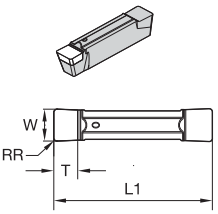
catalog number	seat size	W mm	W in	RL mm	RL in	LI mm	LI in	αR
A4C0155R16CF01	1	1,50	.059	0,2	.006	16	.61	16.0
A4C0155R06CF01	1	1,50	.059	0,2	.006	16	.61	6.0
A4C0155R10CF01	1	1,50	.059	0,2	.006	16	.61	10.0
A4C0205R10CF02	2	1,99	.078	0,2	.008	20	.79	10.0
A4C0205R06CF02	2	1,99	.078	0,2	.008	20	.79	6.0
A4C0255R06CF02	2B	2,49	.098	0,2	.008	20	.79	6.0
A4C0305R06CF02	3	3,05	.120	0,2	.008	20	.79	6.0
A4C0305R10CF02	3	3,05	.120	0,2	.008	20	.79	10.0
A4C0405R06CF02	4	4,05	.159	0,2	.008	20	.79	6.0
A4C0405R10CF02	4	4,05	.159	0,2	.008	20	.79	10.0

A4C-L-CF

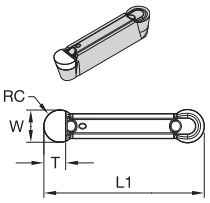
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	αL
A4C0155L06CF01	1	1,50	.059	0,2	.006	16	.61	6.0
A4C0205L06CF02	2	1,99	.078	0,2	.008	20	.79	6.0
A4C0205L10CF02	2	1,99	.078	0,2	.008	20	.79	10.0
A4C0305L06CF02	3	3,05	.120	0,2	.008	20	.79	6.0
A4C0305L10CF02	3	3,05	.120	0,2	.008	20	.79	10.0
A4C0405L06CF02	4	4,05	.159	0,2	.008	20	.79	6.0
A4C0405L10CF02	4	4,05	.159	0,2	.008	20	.79	10.0



A4G-P-E-ST



A4G-P-S-ST



A4R-P-E-ST

● first choice
○ alternate choice

		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-P-E-ST

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0300M03P04EST	3	3,00	.118	0,4	.016	20	.78	3,0	.118
A4G0400M04P04EST	4	4,00	.157	0,4	.016	20	.78	3,3	.130
A4G0500M05P08EST	5	5,00	.197	0,8	.031	25	.98	3,5	.138
A4G0600M06P08EST	6	6,00	.236	0,8	.031	30	1.18	4,0	.157

A4G-P-S-ST

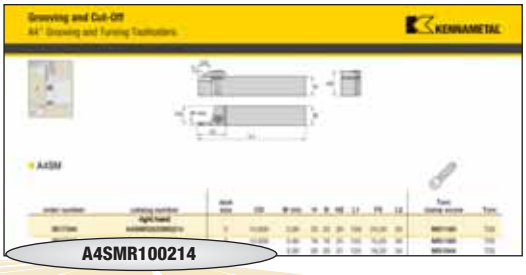
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4G0300M03P04S02025ST	3	3,00	.118	0,4	.016	20	.78	3,0	.118
A4G0400M04P04S02025ST	4	4,00	.157	0,4	.016	20	.78	3,3	.130
A4G0500M05P08S02025ST	5	5,00	.197	0,8	.031	25	.98	3,5	.138
A4G0600M06P08S02025ST	6	6,00	.236	0,8	.031	30	1.18	4,0	.157

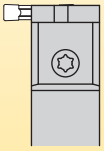
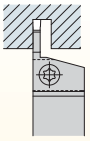
A4R-P-E-ST

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in
A4R0300M03P00EST	3	3,00	.118	–	–	20	.78	2,2	.087
A4R0400M04P00EST	4	4,00	.157	–	–	20	.78	2,9	.114
A4R0500M05P00EST	5	5,00	.197	–	–	25	.98	3,7	.146
A4R0600M06P00EST	6	6,00	.236	–	–	30	1.18	4,4	.173

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A4	S	M	R	10	02	14
Tooling System	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max Grooving Depth
A4 = Grooving and Turning	 **S** = Straight  **E** = End mounted 90°		 **R** = Right hand **L** = Left hand **N** = Neutral		02 03 04 05 06 08 10	in millimeters

M =
Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

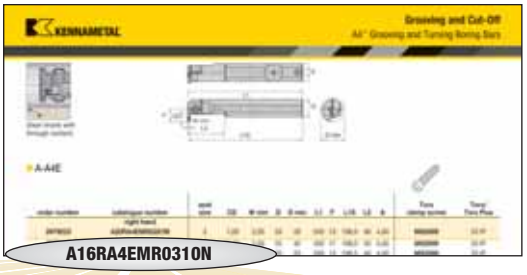
E =
No steel support for face grooving

inch:
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)

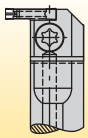
metric:
Height x width in mm, letter indicates tool length according to ISO

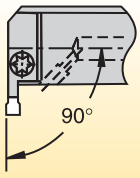
metric tool length (mm)
K = 125
M = 150
P = 170

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

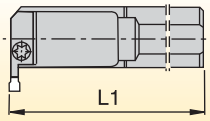


A	16	R	A4	E	M	R	03	10	N
Steel Bar with Coolant	Bar Diameter	Bar Length	A4 Groove & Turn System	Tool Style	Support Type	Hand of Tool	Insert Seat Size	Grooving Depth in mm	Tool Units



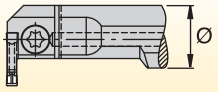


E = End mounted (90°)



inch bars:
R = 8"
S = 10"
T = 12"

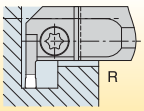
metric bars:
R = 200mm
S = 250mm
T = 300mm



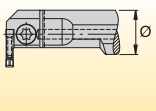
inch bars:
A two-digit number which indicates the bar diameter in 1/16" increments.

metric bars:
Bar diameter in millimeters

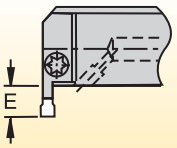
M = Maximum support



R = Right hand



L = Left hand

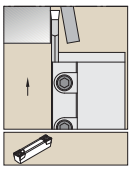


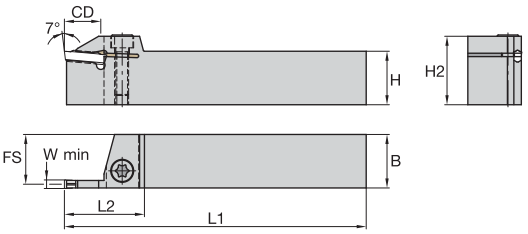
conversions:

mm		inch
7mm	=	.28"
10mm	=	.39"
12mm	=	.47"
16mm	=	.63"

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
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

N = Inch
M = Metric





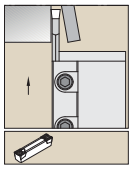
A4SM

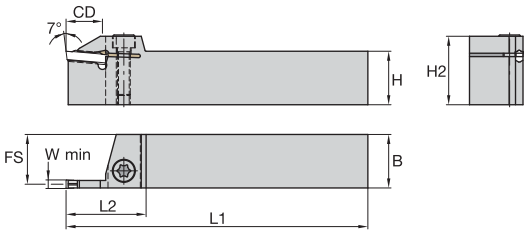


order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	clamp screw	Torx
	right hand											
2976495	A4SMR100214	2	.55	.079	.625	.625	.98	5.00	.59	1.18	MS1160	T20
2976496	A4SMR120214	2	.55	.079	.750	.750	.95	5.00	.71	1.18	MS1160	T20
2976497	A4SMR120217	2	.67	.079	.750	.750	1.18	5.00	.71	1.34	MS1944	T25
2976498	A4SMR160217	2	.67	.079	1.000	1.000	1.24	6.00	.96	1.34	MS1944	T25
1953179	A4SMR120314	3	.55	.118	.750	.750	1.06	5.00	.69	1.38	MS1595	T30
1953177	A4SMR100314	3	.55	.118	.625	.625	1.03	5.00	.57	1.38	MS2091	T25
1953181	A4SMR160317	3	.67	.118	1.000	1.000	1.26	6.00	.94	1.46	MS1970	T30
1957224	A4SMR100414	4	.55	.157	.625	.625	1.03	5.00	.55	1.38	MS2091	T25
1953323	A4SMR120414	4	.55	.157	.750	.750	1.06	5.00	.67	1.38	MS1595	T30
1953325	A4SMR160417	4	.67	.157	1.000	1.000	1.26	6.00	.92	1.46	MS1970	T30
1957226	A4SMR200417	4	.67	.157	1.250	1.250	1.54	6.00	1.17	1.46	MS1970	T30
1953327	A4SMR120519	5	.75	.197	.750	.750	1.10	5.00	.65	1.57	MS1595	T30
1953329	A4SMR160520	5	.79	.197	1.000	1.000	1.30	6.00	.90	1.57	MS1970	T30
1957228	A4SMR200522	5	.87	.197	1.250	1.250	1.54	6.00	1.15	1.65	MS1970	T30
2263175	A4SMR120620	6	.79	.236	.750	.750	1.06	5.00	.64	1.57	MS1595	T30
2263176	A4SMR160620	6	.79	.236	1.000	1.000	1.30	6.00	.89	1.57	MS1970	T30
2263177	A4SMR160624	6	.94	.236	1.000	1.000	1.30	6.00	.89	1.69	MS1970	T30
2263178	A4SMR200626	6	1.02	.236	1.250	1.250	1.57	6.00	1.14	1.77	MS1970	T30
2263179	A4SMR240626	6	1.02	.236	1.500	1.500	1.81	7.00	1.39	1.77	MS1970	T30
2263185	A4SMR160820	8	.79	.315	1.000	1.000	1.34	6.00	.86	1.69	MS1490	T45
2263186	A4SMR160824	8	.94	.315	1.000	1.000	1.34	6.00	.86	1.81	MS1490	T45
2263187	A4SMR200826	8	1.02	.315	1.250	1.250	1.61	6.00	1.11	1.85	MS1490	T45
2263188	A4SMR240826	8	1.02	.315	1.500	1.500	1.85	7.00	1.36	1.85	MS1490	T45
2263193	A4SMR201026	10	1.02	.394	1.250	1.250	1.61	6.00	1.08	1.85	MS1490	T45
2263195	A4SMR241026	10	1.02	.394	1.500	1.500	1.85	7.00	1.33	1.85	MS1490	T45

(continued)

(A4SM continued)







order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	clamp screw	Torx
	left hand											
2976491	A4SML100214	2	.55	.079	.625	.625	.98	5.00	.59	1.18	MS1160	T20
2976492	A4SML120214	2	.55	.079	.750	.750	.95	5.00	.71	1.18	MS1160	T20
2976493	A4SML120217	2	.67	.079	.750	.750	1.18	5.00	.71	1.34	MS1944	T25
2976494	A4SML160217	2	.67	.079	1.000	1.000	1.24	6.00	.96	1.34	MS1944	T25
1953178	A4SML100314	3	.55	.118	.625	.625	1.03	5.00	.57	1.38	MS2091	T25
1953180	A4SML120314	3	.55	.118	.750	.750	1.06	5.00	.69	1.38	MS1595	T30
1953182	A4SML160317	3	.67	.118	1.000	1.000	1.26	6.00	.94	1.46	MS1970	T30
1953324	A4SML120414	4	.55	.157	.750	.750	1.06	5.00	.67	1.38	MS1595	T30
1957227	A4SML200417	4	.67	.157	1.250	1.250	1.54	6.00	1.17	1.46	MS1970	T30
1953326	A4SML160417	4	.67	.157	1.000	1.000	1.26	6.00	.92	1.46	MS1970	T30
1953328	A4SML120519	5	.75	.197	.750	.750	1.10	5.00	.65	1.57	MS1595	T30
1953330	A4SML160520	5	.79	.197	1.000	1.000	1.30	6.00	.90	1.57	MS1970	T30
1957229	A4SML200522	5	.87	.197	1.250	1.250	1.54	6.00	1.15	1.65	MS1970	T30
2263180	A4SML120620	6	.79	.236	.750	.750	1.06	5.00	.64	1.57	MS1595	T30
2263181	A4SML160620	6	.79	.236	1.000	1.000	1.30	6.00	.89	1.57	MS1970	T30
2263182	A4SML160624	6	.94	.236	1.000	1.000	1.30	6.00	.89	1.69	MS1970	T30
2263183	A4SML200626	6	1.02	.236	1.250	1.250	1.57	6.00	1.14	1.77	MS1970	T30
2263184	A4SML240626	6	1.02	.236	1.500	1.500	1.81	7.00	1.39	1.77	MS1970	T30
2263189	A4SML160820	8	.79	.315	1.000	1.000	1.34	6.00	.86	1.69	MS1490	T45
2263190	A4SML160824	8	.94	.315	1.000	1.000	1.34	6.00	.86	1.81	MS1490	T45
2263191	A4SML200826	8	1.02	.315	1.250	1.250	1.61	6.00	1.11	1.85	MS1490	T45
2263192	A4SML240826	8	1.02	.315	1.500	1.500	1.85	7.00	1.36	1.85	MS1490	T45
2263194	A4SML201026	10	1.02	.394	1.250	1.250	1.61	6.00	1.08	1.85	MS1490	T45
2263196	A4SML241026	10	1.02	.394	1.500	1.500	1.85	7.00	1.33	1.85	MS1490	T45



KM Micro™ Quick Change Tooling System

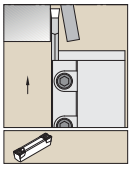
A smaller, more compact version of the internationally reowned KM™ system.

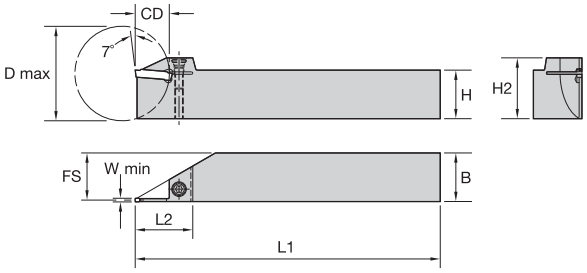
- Quick-change cutter heads reduce indexing and set-up times by 66%.
- Specially designed for use with automatic and smaller universal lathes.
- Unique flange attachment system increases machine tool capacity.
- KM Micro square shank adapters can be installed quickly and easily in existing tool block adapters.

Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

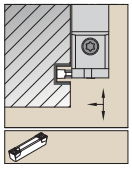
KENNAMETAL®

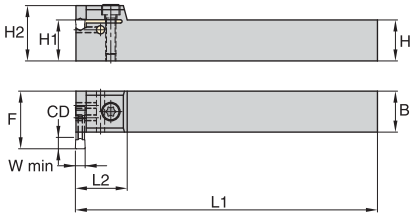


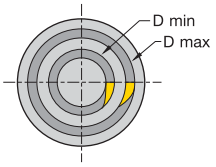


A4SC

catalog number	seat size	CD	W min	H	B	H2	H3	L1	FS	L2	insert screw	Torx wrench
right hand												
A4SCR060113	1	.53	.059	.375	.375	.82	.25	4.50	.35	.98	**MS1156**	**KT15**
A4SCR080113	1	.53	.059	.500	.500	.82	.13	4.50	.47	.98	**MS1156**	**KT15**
A4SCR100113	1	.53	.059	.625	.625	.82	—	4.50	.60	.98	**MS1156**	**KT15**
A4SCR120113	1.5	.53	.059	.750	.743	.95	—	5.00	.72	.98	**MS1156**	**KT15**
A4SCR100217	2	.69	.079	.625	.625	1.02	.16	4.50	.59	1.22	—	**KT25**
A4SCR080214	2	.57	.079	.500	.500	.82	.13	4.50	.46	1.10	—	**KT20**
A4SCR100317	3	.69	.118	.625	.625	1.06	.16	4.50	.57	1.30	—	—
A4SCR080314	3	.57	.118	.500	.500	.90	.13	4.50	.45	1.18	—	—
left hand												
A4SCL080113	1	.53	.059	.500	.500	.82	.13	4.50	.47	.98	**MS1156**	**KT15**
A4SCL060113	1	.53	.059	.375	.375	.82	.25	4.50	.35	.98	**MS1156**	**KT15**
A4SCL120113	1.5	.53	.059	.750	.750	.95	—	5.00	.72	.98	**MS1156**	**KT15**
A4SCL100113	1.5	.53	.059	.625	.625	.82	—	4.50	.60	.98	**MS1156**	**KT15**
A4SCL100217	2	.69	.079	.625	.625	1.02	.16	4.50	.59	1.22	—	**KT25**
A4SCL080214	2	.57	.079	.500	.500	.82	.13	4.50	.46	1.10	—	**KT20**
A4SCL100317	3	.69	.118	.625	.625	1.06	.16	4.50	.57	1.30	—	—
A4SCL080314	3	.57	.118	.500	.500	.90	.13	4.50	.45	1.18	—	—







A4EN

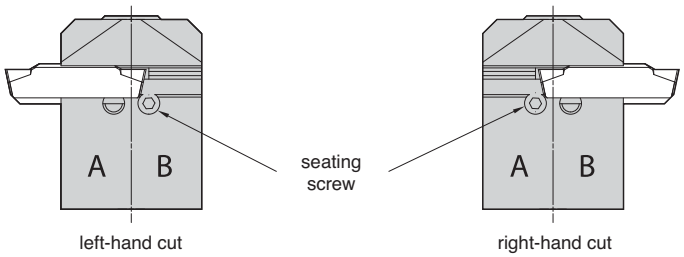




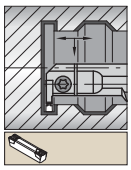
order number	catalog number	seat size	CD	W min	D min	H	H1	B	H2	L1	F	L2	clamp screw	Torx	seating screw	hex
2414138	**A4ENN120305**	3	.20	.118	2.756	.75	.75	.75	1.06	5.00	.965	.98	**MS2091**	T25	**MS2090**	1.5 mm
2414139	**A4ENN160305**	3	.20	.118	2.756	1.00	1.00	1.00	1.26	6.00	1.213	.98	**MS2091**	T25	**MS2090**	1.5 mm
1953332	**A4ENN160407**	4	.28	.157	3.543	1.00	1.00	1.00	1.26	6.00	1.309	.98	**MS2091**	T25	**MS2090**	1.5 mm
1953331	**A4ENN120407**	4	.28	.157	3.543	.75	.75	.75	1.06	5.00	1.061	.98	**MS2091**	T25	**MS2090**	1.5 mm
1953334	**A4ENN160509**	5	.35	.197	4.724	1.00	1.00	1.00	1.30	6.00	1.398	1.34	**MS1970**	T30	**193.297**	1.5 mm
1953333	**A4ENN120509**	5	.35	.197	4.724	.75	.75	.75	1.10	5.00	1.148	1.10	**MS1595**	T30	**MS2090**	1.5 mm
2511468	**A4ENN120611**	6	.43	.236	4.724	.75	.75	.75	1.10	5.00	1.374	1.34	**MS1595**	T30	**193.297**	2 mm
2511470	**A4ENN200611**	6	.43	.236	4.724	1.25	1.25	1.25	1.57	6.00	1.697	1.34	**MS1970**	T30	**193.297**	2 mm
2511469	**A4ENN160611**	6	.43	.236	4.724	1.00	1.00	1.00	1.30	6.00	1.539	1.34	**MS1970**	T30	**193.297**	2 mm
2511471	**A4ENN160811**	8	.43	.315	4.724	1.00	1.00	1.00	1.38	6.00	1.539	1.57	**MS1490**	T45	**193.407**	2.5 mm
2511472	**A4ENN200811**	8	.43	.315	4.724	1.25	1.25	1.25	1.65	6.00	1.697	1.57	**MS1490**	T45	**193.407**	2.5 mm

NOTE: D min for face grooving applications.
A4EN-style toolholders are designed without steel support for face grooving capacity.
Cutting feed recommendations should be reduced by 25–30%.
Recommended clamp screw torque, 6–8 Nm (50–70 in. lbs.).
Minimum cutting width supplied for reference only; see insert listing for actual width. Always match seat size of insert to seat size of holder.

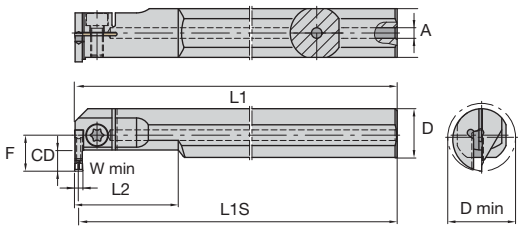
A4EN Insert Mounting



A4EN-style holders can be used for either left- or right-hand applications. The seating screw is to be used in position B for a left-hand cut and in position A for a right-hand cut.

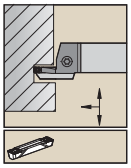


Steel shank with through coolant.

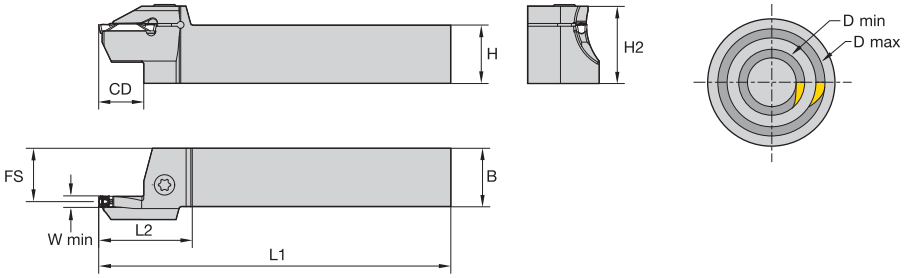


A-A4E

order number	catalog number	seat size	CD	W min	D	D min	L1	F	L1S	L2	A	clamp screw	Torx/ Torx Plus
	right hand												
2979229	**A16RA4EMR0210N**	2	.394	.079	1.000	1.260	8.02	.664	7.98	1.97	.20	**MS2089**	25 IP
2979227	**A12RA4EMR0207N**	2	.276	.079	.750	.984	8.02	.507	7.98	1.57	.16	**MS2089**	25 IP
1953337	**A16RA4EMR0310N**	3	.394	.118	1.000	1.260	8.02	.669	7.96	1.97	.20	**MS1595**	T30
1953339	**A20SA4EMR0312N**	3	.472	.118	1.250	1.575	10.00	.866	9.94	2.52	.24	**MS1595**	T30
1953335	**A12RA4EMR0307N**	3	.276	.118	.750	.984	8.00	.512	7.94	1.57	.16	**MS2089**	25 IP
1953341	**A12RA4EMR0407N**	4	.276	.157	.750	.984	8.00	.512	7.92	1.57	.16	**MS2089**	25 IP
1953343	**A16RA4EMR0410N**	4	.394	.157	1.000	1.260	8.02	.669	7.94	1.97	.20	**MS1595**	T30
1953347	**A24TA4EMR0416N**	4	.630	.157	1.500	2.047	12.00	1.181	11.92	3.15	.24	**MS1970**	T30
1953345	**A20SA4EMR0412N**	4	.472	.157	1.250	1.575	10.00	.866	9.92	2.52	.24	**MS1595**	T30
1953351	**A24TA4EMR0516N**	5	.630	.197	1.500	2.047	12.00	1.181	11.90	3.15	.24	**MS1970**	T30
1953349	**A20SA4EMR0516N**	5	.630	.197	1.250	1.732	10.00	1.024	9.90	2.52	.24	**MS1595**	T30
2263199	**A24TA4EMR0616N**	6	.630	.236	1.500	2.047	12.00	1.181	11.88	3.15	.24	**MS1970**	T30
2263203	**A20SA4EMR0616N**	6	.630	.236	1.250	1.732	10.00	1.024	9.88	2.52	.24	**MS1595**	T30
2263200	**A32TA4EMR0616N**	6	.630	.236	2.000	2.559	12.00	1.378	11.88	3.94	.24	**MS1970**	T30
	left hand												
2979226	**A12RA4EML0207N**	2	.276	.079	.750	.984	8.02	.507	7.98	1.57	.16	**MS2089**	25 IP
1953340	**A20SA4EML0312N**	3	.472	.118	1.250	1.575	10.00	.866	9.94	2.52	.24	**MS1595**	T30
1953336	**A12RA4EML0307N**	3	.276	.118	.750	.984	8.00	.512	7.94	1.57	.16	**MS2089**	25 IP
1953338	**A16RA4EML0310N**	3	.394	.118	1.000	1.260	8.02	.669	7.96	1.97	.20	**MS1595**	T30
1953344	**A16RA4EML0410N**	4	.394	.157	1.000	1.260	8.02	.669	7.94	1.97	.20	**MS1595**	T30
1953346	**A20SA4EML0412N**	4	.472	.157	1.250	1.575	10.00	.866	9.92	2.52	.24	**MS1595**	T30
1953348	**A24TA4EML0416N**	4	.630	.157	1.500	2.047	12.00	1.181	11.92	3.15	.24	**MS1970**	T30
1953342	**A12RA4EML0407N**	4	.276	.157	.750	.984	8.00	.512	7.92	1.57	.16	**MS2089**	25 IP
1953352	**A24TA4EML0516N**	5	.630	.197	1.500	2.047	12.00	1.181	11.90	3.15	.24	**MS1970**	T30
1953350	**A20SA4EML0516N**	5	.630	.197	1.250	1.732	10.00	1.024	9.90	2.52	.24	**MS1595**	T30
2263202	**A32TA4EML0616N**	6	.630	.236	2.000	2.559	12.00	1.378	11.88	3.94	.24	**MS1970**	T30
2263201	**A24TA4EML0616N**	6	.630	.236	1.500	2.047	12.00	1.181	11.88	3.15	.24	**MS1970**	T30
2263204	**A20SA4EML0616N**	6	.630	.236	1.250	1.732	10.00	1.024	9.88	2.52	.24	**MS1595**	T30



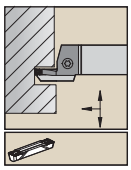
Right hand shown.



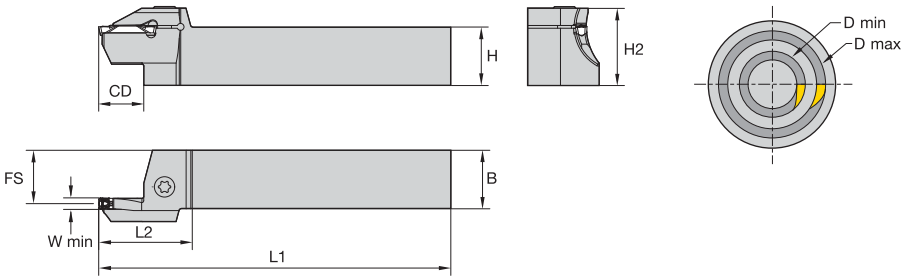
A4SB Outboard Sweep



order number	catalog number	seat size	CD	D min	D max	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand													
3865921	**A4SBR2020K2S12020025**	2S	12	20	25	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865922	**A4SBR2020K2S12025036**	2S	12	25	36	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865920	**A4SBR2020K2S12016020**	2S	12	16	20	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865924	**A4SBR2020K3S14025036**	3S	14	25	36	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865923	**A4SBR2020K3S14020025**	3S	14	20	25	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865926	**A4SBR2020K4S14035048**	4S	14	35	48	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865925	**A4SBR2020K4S14025035**	4S	14	25	35	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865927	**A4SBR2525M5S19028038**	5S	19	28	38	5,00	25	25	33	150	22,70	40	**MS1970**	T30
3865928	**A4SBR2525M5S19038058**	5S	19	38	58	5,00	25	25	33	150	22,70	40	**MS1970**	T30
	left hand													
3865929	**A4SBL2020K2S12016020**	2S	12	16	20	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865930	**A4SBL2020K2S12020025**	2S	12	20	25	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865931	**A4SBL2020K2S12025036**	2S	12	25	36	2,00	20	20	25	125	19,20	28	**MS1160**	T20
3865932	**A4SBL2020K3S14020025**	3S	14	20	25	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865933	**A4SBL2020K3S14025036**	3S	14	25	36	3,00	20	20	28	125	18,70	35	**MS1595**	T30
3865935	**A4SBL2020K4S14035048**	4S	14	35	48	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865934	**A4SBL2020K4S14025035**	4S	14	25	35	4,00	20	20	28	125	18,20	35	**MS1595**	T30
3865936	**A4SBL2525M5S19028038**	5S	19	28	38	5,00	25	25	33	150	22,70	40	**MS1970**	T30
3865937	**A4SBL2525M5S19038058**	5S	19	38	58	5,00	25	25	33	150	22,70	40	**MS1970**	T30



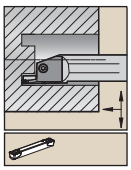
Right hand shown.



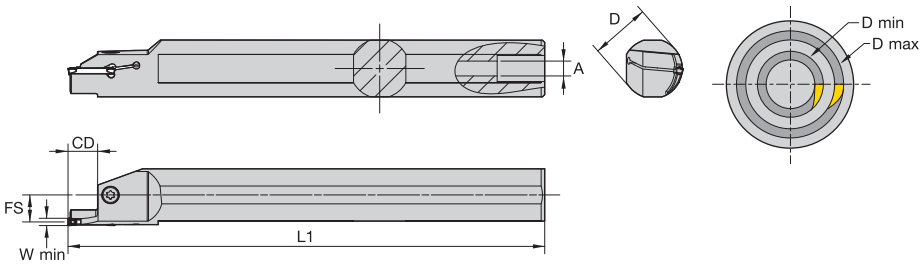
A4SB Outboard Sweep • Inch



order number	catalog number	seat size	CD	D min	D max	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand													
3865903	A4SBR122S12020025	2S	.47	.787	.984	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865904	A4SBR122S12025036	2S	.47	.984	1.417	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865852	A4SBR122S12016020	2S	.47	.630	.787	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865905	A4SBR123S14020025	3S	.55	.787	.984	.118	.75	.75	1.07	5.00	.699	1.18	MS1595	T30
3865906	A4SBR123S14025036	3S	.55	.984	1.417	.118	.75	.75	1.07	5.00	.699	1.38	MS1595	T30
3865907	A4SBR124S14025035	4S	.55	.984	1.378	.157	.75	.75	1.07	5.00	.679	1.38	MS1595	T30
3865908	A4SBR124S14035048	4S	.55	1.378	1.890	.157	.75	.75	1.07	5.00	.679	1.38	MS1595	T30
3865910	A4SBR165S19038058	4S	.75	1.496	2.284	.197	1.00	1.00	1.32	6.00	.909	1.57	MS1970	T30
3865909	A4SBR165S19028038	4S	.75	1.102	1.496	.197	1.00	1.00	1.32	6.00	.909	1.57	MS1970	T30
	left hand													
3865912	A4SBL122S12020025	2S	.47	.787	.984	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865911	A4SBL122S12016020	2S	.47	.630	.787	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865913	A4SBL122S12025036	2S	.47	.984	1.417	.079	.75	.75	.95	5.00	.718	1.10	MS1160	T20
3865914	A4SBL123S14020025	3S	.55	.787	.984	.118	.75	.75	1.07	5.00	.699	1.18	MS1595	T30
3865915	A4SBL123S14025036	3S	.55	.984	1.417	.118	.75	.75	1.07	5.00	.699	1.38	MS1595	T30
3865916	A4SBL124S14025035	4S	.55	.984	1.378	.157	.75	.75	1.07	5.00	.679	1.38	MS1595	T30
3865917	A4SBL124S14035048	4S	.55	1.378	1.890	.157	.75	.75	1.07	5.00	.679	1.38	MS1595	T30
3865919	A4SBL165S19038058	4S	.75	1.496	2.284	.187	1.00	1.00	1.32	6.00	.909	1.57	MS1970	T30
3865918	A4SBL165S19028038	4S	.75	1.102	1.496	.197	1.00	1.00	1.32	6.00	.909	1.57	MS1970	T30



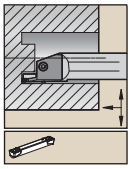
Right hand shown.



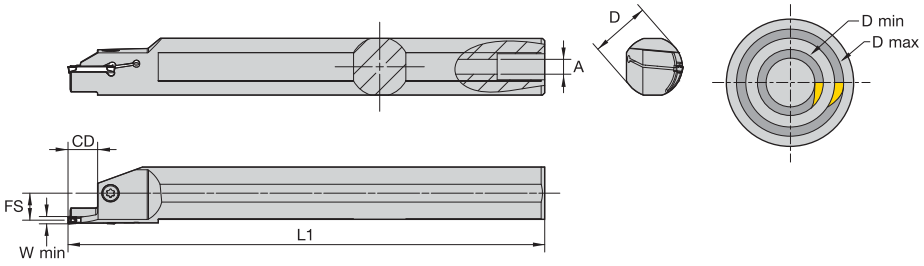
A4SS Inboard Sweep



order number	catalog number	seat size	CD	D min	D max	W min	D	L1	FS	A	Torx clamp screw	Torx
	right hand											
3871038	**A16RA4SAR2S12M017021**	2S	12,00	17	21	2,00	16	201	7	4,00	**MS1160**	T20
3871039	**A20RA4SAR2S12M021026**	2S	12,00	21	23	2,00	20	201	9	4,00	**MS1160**	T20
3871040	**A25RA4SAR2S12M026036**	2S	12,00	26	36	2,00	25	201	12	6,35	**MS1160**	T20
3871041	**A20RA4SAR3S14M021026**	3S	14,00	21	26	3,00	20	201	9	4,00	**MS1160**	T20
3871042	**A25RA4SAR3S14M026036**	3S	14,00	26	36	3,00	25	201	11	6,35	**MS1160**	T20
	left hand											
3871033	**A16RA4SAL2S12M017021**	2S	12,00	17	21	2,00	16	201	7	4,00	**MS1160**	T20
3871034	**A20RA4SAL2S12M021026**	2S	12,00	21	26	2,00	20	201	9	4,00	**MS1160**	T20
3871035	**A25RA4SAL2S12M026036**	2S	12,00	26	36	2,00	25	201	12	6,35	**MS1160**	T20
3871036	**A20RA4SAL3S14M021026**	3S	14,00	21	26	3,00	20	201	9	4,00	**MS1160**	T20
3871037	**A25RA4SAL3S14M026036**	3S	14,00	26	36	3,00	25	201	11	6,35	**MS1160**	T20



Right hand shown.



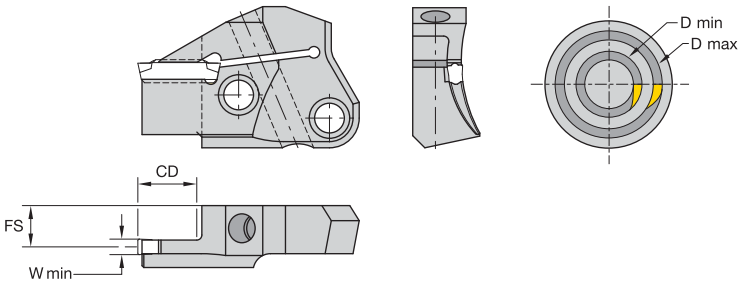
A4SS Inboard Sweep • Inch



order number	catalog number	seat size	CD	D min	D max	W min	D	L1	FS	A	Torx clamp screw	Torx
	right hand											
3871028	**A10RA4SAR2S12N017021**	2S	.472	.669	.827	.079	.63	8.012	.28	.158	**MS1160**	T20
3871029	**A12RA4SAR2S12N021026**	2S	.472	.827	1.024	.079	.75	8.012	.34	.158	**MS1160**	T20
3871030	**A16RA4SAR2S12N026036**	2S	.472	1.024	1.417	.079	1.00	8.012	.47	.250	**MS1160**	T20
3871032	**A16RA4SAR3S14N026036**	3S	.551	1.024	1.417	.118	1.00	8.012	.45	.250	**MS1160**	T20
3871031	**A12RA4SAR3S14N021026**	3S	.551	.827	1.024	.118	.75	8.012	.33	.158	**MS1160**	T20
	left hand											
3871024	**A12RA4SAL2S12N021026**	2S	.472	.827	1.024	.079	.75	8.012	.34	.158	**MS1160**	T20
3871023	**A10RA4SAL2S12N017021**	2S	.472	.669	.827	.079	.63	8.012	.28	.158	**MS1160**	T20
3871025	**A16RA4SAL2S12N026036**	2S	.472	1.024	1.417	.079	1.00	8.012	.47	.250	**MS1160**	T20
3871026	**A12RA4SAL3S14N021026**	3S	.551	.827	1.024	.118	.75	8.012	.33	.158	**MS1160**	T20
3871027	**A16RA4SAL3S14N026036**	3S	.551	1.024	1.417	.118	1.00	8.012	.45	.250	**MS1160**	T20



Right hand shown.

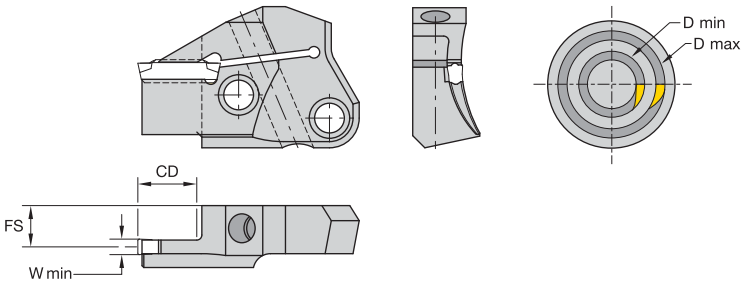


A4M-SB Outboard Sweep

order number	catalog number	seat size	D min	D max	CD	W min	FS	cartridge size
	right hand							
3867458	A4M50R2S12B020025	2S	20	25	12	2	10,90	50
3867459	A4M50R2S12B025036	2S	25	36	12	2	10,90	50
3867457	A4M50R2S12B016020	2S	16	20	12	2	10,90	50
3867461	A4M50R3S14B025036	3S	25	36	14	3	10,49	50
3867460	A4M50R3S14B020025	3S	20	25	14	3	10,49	50
3867463	A4M50R4S14B035048	4S	35	48	14	4	10,00	50
3867462	A4M50R4S14B025035	4S	25	35	14	4	10,00	50
3867465	A4M50R5S17B038058	5S	38	58	17	5	9,50	50
3867464	A4M50R5S17B028038	5S	28	38	17	5	9,50	50
	left hand							
3867467	A4M50L2S12B020025	2S	20	25	12	2	10,90	50
3867468	A4M50L2S12B025036	2S	25	36	12	2	10,90	50
3867466	A4M50L2S12B016020	2S	16	20	12	2	10,90	50
3867470	A4M50L3S14B025036	3S	25	36	14	3	10,49	50
3867469	A4M50L3S14B020025	3S	20	25	14	3	10,49	50
3867472	A4M50L4S14B035048	4S	35	48	14	4	10,00	50
3867471	A4M50L4S14B025035	4S	25	35	14	4	10,00	50
3867485	A4M50L5S17B038058	5S	38	58	17	5	9,50	50
3867484	A4M50L5S17B028038	5S	28	38	17	5	9,50	50

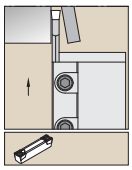


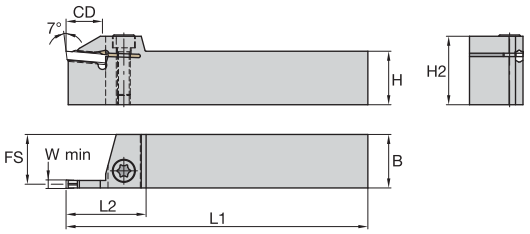
Right hand shown.



A4M-SB Outboard Sweep • Inch

order number	catalog number	seat size	D min	D max	CD	W min	FS	cartridge size
	right hand							
3867458	**A4M50R2S12B020025**	2S	.787	.984	.47	.079	.429	50
3867459	**A4M50R2S12B025036**	2S	.984	1.417	.47	.079	.429	50
3867457	**A4M50R2S12B016020**	2S	.630	.787	.47	.079	.429	50
3867461	**A4M50R3S14B025036**	3S	.984	1.417	.55	.118	.413	50
3867460	**A4M50R3S14B020025**	3S	.787	.984	.55	.118	.413	50
3867463	**A4M50R4S14B035048**	4S	1.378	1.890	.55	.157	.394	50
3867462	**A4M50R4S14B025035**	4S	.984	1.378	.55	.157	.394	50
3867465	**A4M50R5S17B038058**	5S	1.496	2.284	.67	.197	.374	50
3867464	**A4M50R5S17B028038**	5S	1.102	1.496	.67	.197	.374	50
	left hand							
3867467	**A4M50L2S12B020025**	2S	.787	.984	.47	.079	.429	50
3867468	**A4M50L2S12B025036**	2S	.984	1.417	.47	.079	.429	50
3867466	**A4M50L2S12B016020**	2S	.630	.787	.47	.079	.429	50
3867470	**A4M50L3S14B025036**	3S	.984	1.417	.55	.118	.413	50
3867469	**A4M50L3S14B020025**	3S	.787	.984	.55	.118	.413	50
3867472	**A4M50L4S14B035048**	4S	1.378	1.890	.55	.157	.394	50
3867471	**A4M50L4S14B025035**	4S	.984	1.378	.55	.157	.394	50
3867485	**A4M50L5S17B038058**	5S	1.496	2.284	.67	.197	.374	50
3867484	**A4M50L5S17B028038**	5S	1.102	1.496	.67	.197	.374	50

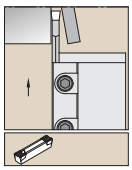


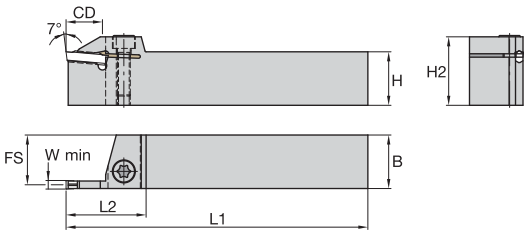


A4SM



order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854265	A4SMR2020K0208	2	8	2	20	20	24	125	19	26	MS1160	T20
3854267	A4SMR2020K0308	3	8	3	20	20	27	125	19	28	MS1595	T30
3854269	A4SMR2020K0408	4	8	4	20	20	27	125	18	28	MS1595	T30
3854271	A4SMR2525M0510	5	10	5	25	25	33	150	23	32	MS1970	T30
3854273	A4SMR2525M0610	6	10	6	25	25	33	150	22	37	MS1970	T30
	left hand											
3854266	A4SML2020K0208	2	8	2	20	20	24	125	19	26	MS1160	T20
3854268	A4SML2020K0308	3	8	3	20	20	27	125	19	28	MS1595	T30
3854270	A4SML2020K0408	4	8	4	20	20	27	125	18	28	MS1595	T30
3854272	A4SML2525M0510	5	10	5	25	25	33	150	23	32	MS1970	T30
3854274	A4SML2525M0610	6	10	6	25	25	33	150	22	37	MS1970	T30

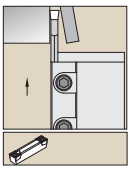


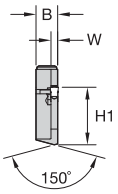


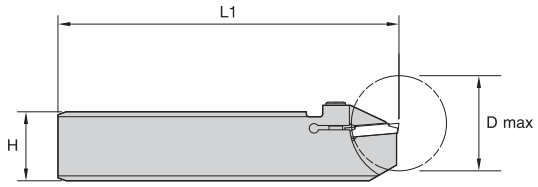
A4SM • Inch



order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854275	A4SMR120208	2	.32	.079	.750	.750	.91	5.00	.71	1.02	MS1160	T20
3854277	A4SMR120308	3	.32	.118	.750	.750	1.01	5.00	.69	1.10	MS1595	T30
3854279	A4SMR120408	4	.32	.158	.750	.750	1.01	5.00	.67	1.10	MS1595	T30
3854281	A4SMR160510	5	.39	.197	1.000	1.000	1.30	6.00	.91	1.26	MS1970	T30
3854283	A4SMR160610	6	.39	.236	1.000	1.000	1.30	6.00	.89	1.46	MS1970	T30
	left hand											
3854276	A4SML120208	2	.32	.079	.750	.750	.91	5.00	.71	1.02	MS1160	T20
3854278	A4SML120308	3	.32	.118	.750	.750	1.01	5.00	.69	1.10	MS1595	T30
3854280	A4SML120408	4	.32	.158	.750	.750	1.01	5.00	.67	1.10	MS1595	T30
3854282	A4SML160510	5	.39	.197	1.000	1.000	1.30	6.00	.91	1.26	MS1970	T30
3854284	A4SML160610	6	.39	.236	1.000	1.000	1.30	6.00	.89	1.46	MS1970	T30



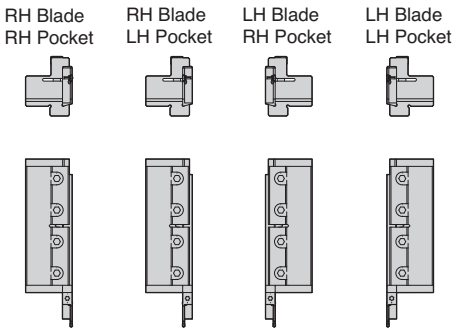


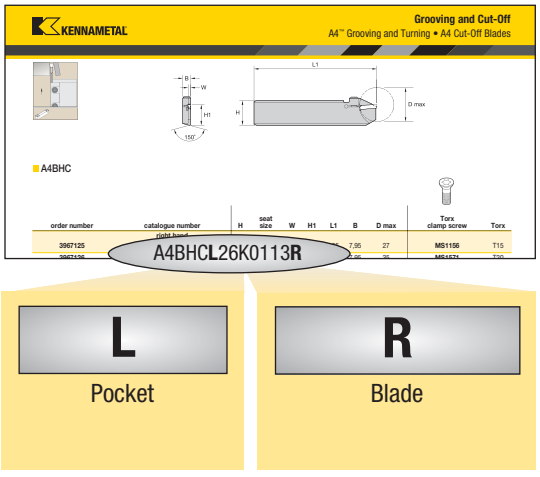


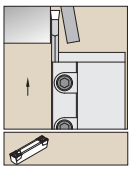
A4BHC

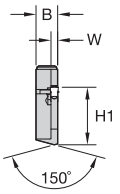


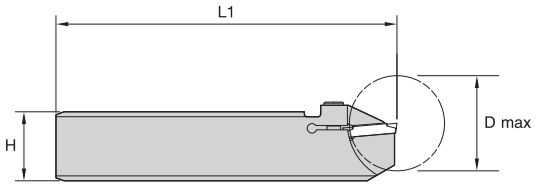
order number	catalog number	H	seat size	W	H1	L1	B	D max	Torx clamp screw	Torx
	right hand									
3967125	A4BHCL26K0113R	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967126	A4BHCL26K0217R	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967127	A4BHCL26K0317R	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967122	A4BHCL32K0113R	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967123	A4BHCL32K0217R	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967124	A4BHCL32K0317R	32	3	3,0	25,0	125	7,95	35	MS1571	T20
3967119	A4BHCR26K0113R	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967120	A4BHCR26K0217R	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967121	A4BHCR26K0317R	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967116	A4BHCR32K0113R	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967117	A4BHCR32K0217R	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967118	A4BHCR32K0317R	32	3	3,0	25,0	125	7,95	35	MS1571	T20
	left hand									
3967138	A4BHCL26K0113L	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967139	A4BHCL26K0217L	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967140	A4BHCL26K0317L	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967135	A4BHCL32K0113L	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967136	A4BHCL32K0217L	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967137	A4BHCL32K0317L	32	3	3,0	25,0	125	7,95	35	MS1571	T20
3967131	A4BHCR26K0113L	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967132	A4BHCR26K0217L	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967134	A4BHCR26K0317L	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967128	A4BHCR32K0113L	32	1	1,5	25,0	125	7,95	27	MS1156	T15
3967129	A4BHCR32K0217L	32	2	2,0	25,0	125	7,95	35	MS1571	T20
3967130	A4BHCR32K0317L	32	3	3,0	25,0	125	7,95	35	MS1571	T20







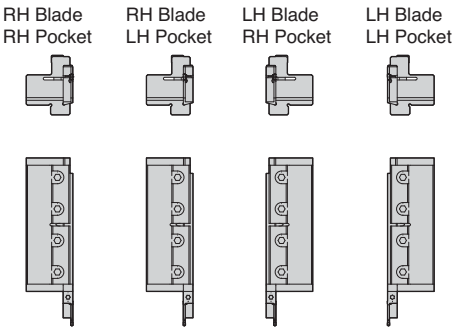




A4BHC • Inch

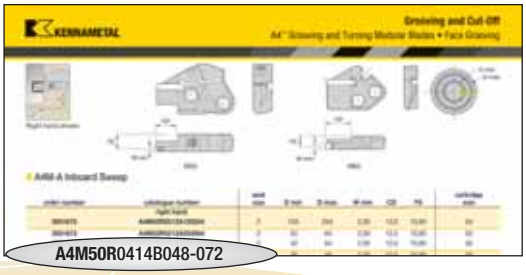


order number	catalog number	H	seat size	W	H1	L1	B	D max	Torx clamp screw	Torx
	right hand									
3967125	A4BHCL26K0113R	1.024	1	.059	.843	4.921	.31	1.063	MS1156	T15
3967126	A4BHCL26K0217R	1.024	2	.079	.843	4.921	.31	1.378	MS1571	T20
3967127	A4BHCL26K0317R	1.024	3	.118	.843	4.921	.31	1.378	MS1571	T20
3967122	A4BHCL32K0113R	1.260	1	.059	.984	4.921	.31	1.063	MS1156	T15
3967123	A4BHCL32K0217R	1.260	2	.079	.984	4.921	.31	1.378	MS1571	T20
3967124	A4BHCL32K0317R	1.260	3	.118	.984	4.921	.31	1.378	MS1571	T20
3967119	A4BHCR26K0113R	1.024	1	.059	.843	4.921	.31	1.063	MS1156	T15
3967120	A4BHCR26K0217R	1.024	2	.079	.843	4.921	.31	1.378	MS1571	T20
3967121	A4BHCR26K0317R	1.024	3	.118	.843	4.921	.31	1.378	MS1571	T20
3967116	A4BHCR32K0113R	1.260	1	.059	.984	4.921	.31	1.063	MS1156	T15
3967117	A4BHCR32K0217R	1.260	2	.079	.984	4.921	.31	1.378	MS1571	T20
3967118	A4BHCR32K0317R	1.260	3	.118	.984	4.921	.31	1.378	MS1571	T20
	left hand									
3967138	A4BHCL26K0113L	1.024	1	.059	.843	4.921	.31	1.063	MS1156	T15
3967139	A4BHCL26K0217L	1.024	2	.079	.843	4.921	.31	1.378	MS1571	T20
3967140	A4BHCL26K0317L	1.024	3	.118	.843	4.921	.31	1.378	MS1571	T20
3967135	A4BHCL32K0113L	1.260	1	.059	.984	4.921	.31	1.063	MS1156	T15
3967136	A4BHCL32K0217L	1.260	2	.079	.984	4.921	.31	1.378	MS1571	T20
3967137	A4BHCL32K0317L	1.260	3	.118	.984	4.921	.31	1.378	MS1571	T20
3967131	A4BHCR26K0113L	1.024	1	.059	.843	4.921	.31	1.063	MS1156	T15
3967132	A4BHCR26K0217L	1.024	2	.079	.843	4.921	.31	1.378	MS1571	T20
3967134	A4BHCR26K0317L	1.024	3	.118	.843	4.921	.31	1.378	MS1571	T20
3967128	A4BHCR32K0113L	1.260	1	.059	.984	4.921	.31	1.063	MS1156	T15
3967129	A4BHCR32K0217L	1.260	2	.079	.984	4.921	.31	1.378	MS1571	T20
3967130	A4BHCR32K0317L	1.260	3	.118	.984	4.921	.31	1.378	MS1571	T20

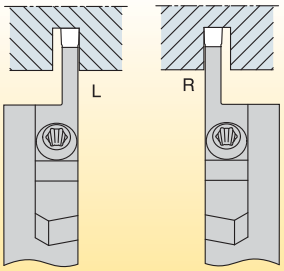


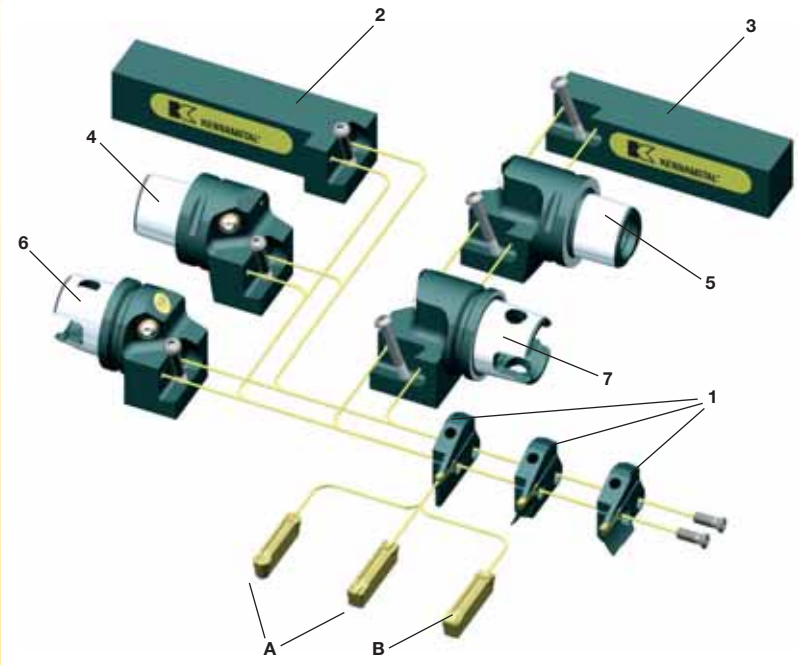
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A4M	50	R
A4 Tooling System	Modular System Size	Hand of Tool



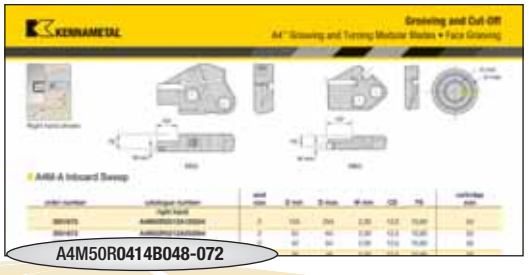


Legend		page(s)
A	A4 Grooving and Turning Inserts	D78–D87
B	A4 Cut-Off Inserts	D86
1	O.D. and Face Grooving Blades	D106–D110
2	KGME Toolholder	D114
3	KGMS Toolholder	D114
4	Capto® KGME Cutting Unit	D117
5	Capto KGMS Cutting Unit	D117
6	KM™ KGME Cutting Unit	D115–D116
7	KM KGMS Cutting Unit	D115–D116

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.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



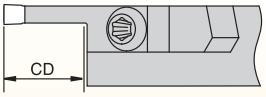
04

Seat Size

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
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

14

Maximum Groove Depth

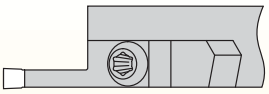


conversions:

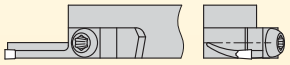
mm		inch
14mm	=	.55"
19mm	=	.75"
20mm	=	.79"
26mm	=	1.02"

B

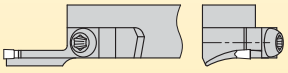
Tool Style



M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters



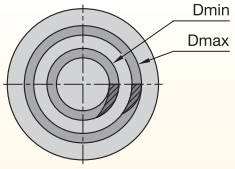
A = Inboard sweep face grooving toolholder



B = Outboard sweep face grooving toolholder

048-072

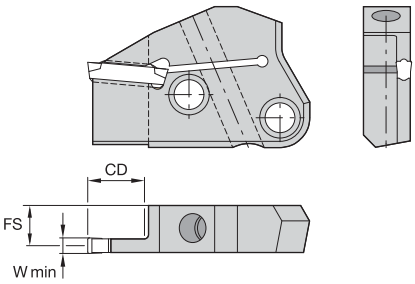
Face Grooving Diameter Range



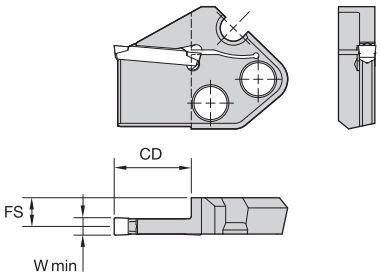
diameters are min and max for outer face groove dia. 999 = unlimited D max



Right hand shown.



M50

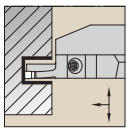


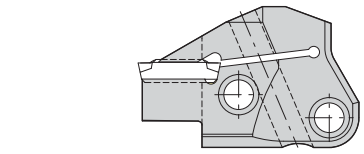
M65

A4M-M

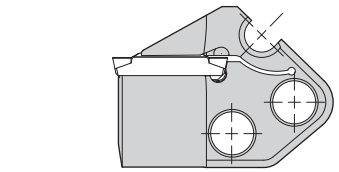
order number	catalog number	seat size	CD	W min	FS	blade size
	right hand					
3051624	**A4M50R0214M**	2	.55	.079	.428	50
1989348	**A4M50R0314M**	3	.55	.118	.410	50
1989350	**A4M50R0414M**	4	.55	.157	.391	50
1989352	**A4M50R0519M**	5	.75	.197	.371	50
3557114	**A4M65R0620M**	6	.79	.236	.389	65
3557116	**A4M65R0626M**	6	1.02	.236	.389	65
3557120	**A4M65R0826M**	8	1.02	.315	.354	65
3557118	**A4M65R0820M**	8	.79	.315	.354	65
3557122	**A4M65R1020M**	10	.79	.394	.329	65
3557124	**A4M65R1026M**	10	1.02	.394	.329	65
	left hand					
3022625	**A4M50L0214M**	2	.55	.079	.428	50
3051623	**A4M50L2B14M**	2B	.55	.098	.421	50
1989347	**A4M50L0314M**	3	.55	.118	.410	50
1989349	**A4M50L0414M**	4	.55	.157	.391	50
1989351	**A4M50L0519M**	5	.75	.197	.371	50
3557117	**A4M65L0626M**	6	1.02	.236	.389	65
3557115	**A4M65L0620M**	6	.79	.236	.389	65
3557119	**A4M65L0820M**	8	.79	.315	.354	65
3557121	**A4M65L0826M**	8	1.02	.315	.354	65
3557123	**A4M65L1020M**	10	.79	.394	.329	65
3557125	**A4M65L1026M**	10	1.02	.394	.329	65

NOTE: Seat size 2B only accepts 2B inserts. Seat size 2 accepts 2 or 2B inserts.

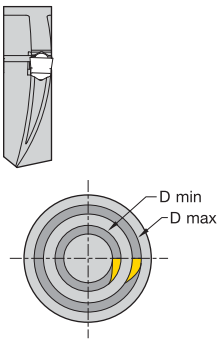

Right hand shown.



M50



M65

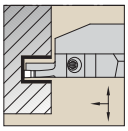


A4M-A Inboard Sweep

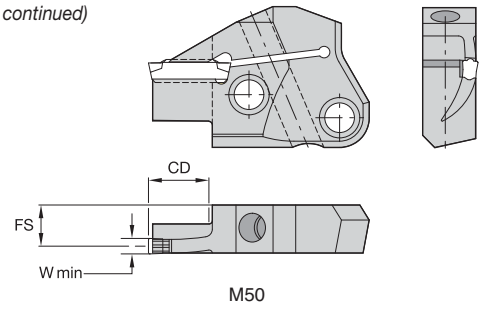
order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3051670	A4M50R0212A036046	2	1.417	1.811	.079	.47	.429	50
3051671	A4M50R0212A042054	2	1.654	2.126	.079	.47	.429	50
3051672	A4M50R0212A050064	2	1.969	2.520	.079	.47	.429	50
3051673	A4M50R0212A060084	2	2.362	3.307	.079	.47	.429	50
3051674	A4M50R0212A080124	2	3.150	4.882	.079	.47	.429	50
3051675	A4M50R0212A120254	2	4.724	10.000	.079	.47	.429	50
3051676	A4M50R0212A250999	2	9.843	—	.079	.47	.429	50
2542517	A4M50R0314A036048	3	1.417	1.890	.118	.55	.413	50
2542518	A4M50R0314A042058	3	1.654	2.284	.118	.55	.413	50
2542519	A4M50R0314A052074	3	2.047	2.913	.118	.55	.413	50
2542520	A4M50R0314A068100	3	2.677	3.937	.118	.55	.413	50
2542521	A4M50R0314A090160	3	3.543	6.299	.118	.55	.413	50
2542522	A4M50R0314A130300	3	5.118	11.811	.118	.55	.413	50
2542523	A4M50R0314A290999	3	11.417	—	.118	.55	.413	50
2542531	A4M50R0414A048072	4	1.890	2.835	.157	.55	.394	50
2542532	A4M50R0414A064100	4	2.520	3.937	.157	.55	.394	50
2542533	A4M50R0414A092150	4	3.622	5.906	.157	.55	.394	50
2542534	A4M50R0414A132300	4	5.197	11.811	.157	.55	.394	50
2542535	A4M50R0414A290999	4	11.417	—	.157	.55	.394	50
2542541	A4M50R0519A058094	5	2.284	3.701	.197	.75	.374	50
2542542	A4M50R0519A080136	5	3.150	5.354	.197	.75	.374	50
2542543	A4M50R0519A120300	5	4.724	11.811	.197	.75	.374	50
2542544	A4M50R0519A250999	5	9.843	—	.197	.75	.374	50
3557131	A4M65R0624A070-112	6	2.756	4.409	.236	.94	.389	65
3557163	A4M65R0624A100-212	6	3.937	8.347	.236	.94	.389	65
3557165	A4M65R0624A200-999	6	7.874	39.331	.236	.94	.389	65
3557167	A4M65R0824A090-200	8	3.543	7.874	.315	.94	.354	65
3557169	A4M65R0824A184-999	8	7.244	39.331	.315	.94	.354	65
3557171	A4M65R1024A100-220	10	3.937	8.661	.394	.94	.329	65
3557173	A4M65R1024A200-999	10	7.874	39.331	.394	.94	.329	65

(continued)

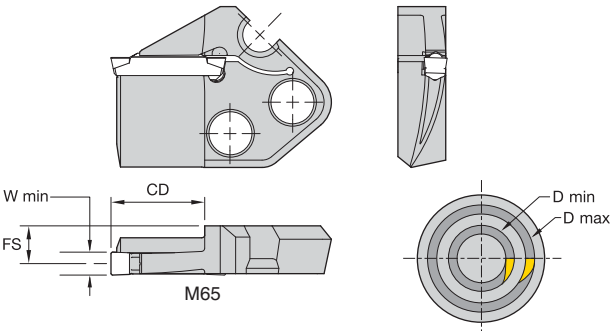
(A4M-A Inboard Sweep continued)



Right hand shown.



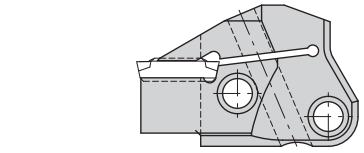
M50



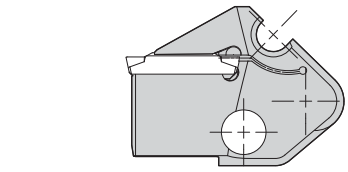
M65

order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3051626	**A4M50L0212A036046**	2	1.417	1.811	.079	.47	.429	50
3051627	**A4M50L0212A042054**	2	1.654	2.126	.079	.47	.429	50
3051628	**A4M50L0212A050064**	2	1.969	2.520	.079	.47	.429	50
3051629	**A4M50L0212A060084**	2	2.362	3.307	.079	.47	.429	50
3051630	**A4M50L0212A080124**	2	3.150	4.882	.079	.47	.429	50
3051631	**A4M50L0212A120254**	2	4.724	10.000	.079	.47	.429	50
3051632	**A4M50L0212A250999**	2	9.843	—	.079	.47	.429	50
2542524	**A4M50L0314A036048**	3	1.417	1.890	.118	.55	.413	50
2542525	**A4M50L0314A042058**	3	1.654	2.284	.118	.55	.413	50
2542526	**A4M50L0314A052074**	3	2.047	2.913	.118	.55	.413	50
2542527	**A4M50L0314A068100**	3	2.677	3.937	.118	.55	.413	50
2542528	**A4M50L0314A090160**	3	3.543	6.299	.118	.55	.413	50
2542529	**A4M50L0314A130300**	3	5.118	11.811	.118	.55	.413	50
2542530	**A4M50L0314A290999**	3	11.417	—	.118	.55	.413	50
2542536	**A4M50L0414A048072**	4	1.890	2.835	.157	.55	.394	50
2542537	**A4M50L0414A064100**	4	2.520	3.937	.157	.55	.394	50
2542538	**A4M50L0414A092150**	4	3.622	5.906	.157	.55	.394	50
2542539	**A4M50L0414A132300**	4	5.197	11.811	.157	.55	.394	50
2542540	**A4M50L0414A290999**	4	11.417	—	.157	.55	.394	50
2542545	**A4M50L0519A058094**	5	2.284	3.701	.197	.75	.374	50
2542546	**A4M50L0519A080136**	5	3.150	5.354	.197	.75	.374	50
2542547	**A4M50L0519A120300**	5	4.724	11.811	.197	.75	.374	50
2542548	**A4M50L0519A250999**	5	9.843	—	.197	.75	.374	50
3557132	**A4M65L0624A070-112**	6	2.756	4.409	.236	.94	.389	65
3557164	**A4M65L0624A100-212**	6	3.937	8.347	.236	.94	.389	65
3557166	**A4M65L0624A200-999**	6	7.874	39.331	.236	.94	.389	65
3557168	**A4M65L0824A090-200**	8	3.543	7.874	.315	.94	.354	65
3557170	**A4M65L0824A184-999**	8	7.244	39.331	.315	.94	.354	65
3557172	**A4M65L1024A100-220**	10	3.937	8.661	.394	.94	.329	65
3557174	**A4M65L1024A200-999**	10	7.874	39.331	.394	.94	.329	65

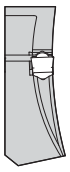

Right hand shown.

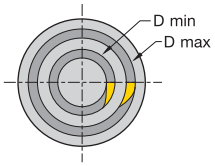


M50



M65





A4M-B Outboard Sweep

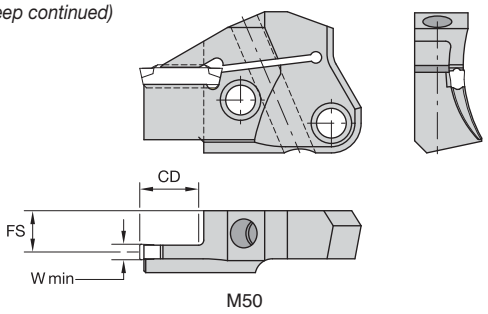
order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3867457	A4M50R2S12B016020	2S	.630	.787	.079	.47	.429	50
3867458	A4M50R2S12B020025	2S	.787	.984	.079	.47	.429	50
3867459	A4M50R2S12B025036	2S	.984	1.417	.079	.47	.429	50
3051677	A4M50R0212B036046	2	1.417	1.811	.079	.47	.429	50
3051678	A4M50R0212B042054	2	1.654	2.126	.079	.47	.429	50
3051679	A4M50R0212B050064	2	1.969	2.520	.079	.47	.429	50
3051680	A4M50R0212B060084	2	2.362	3.307	.079	.47	.429	50
3051681	A4M50R0212B080124	2	3.150	4.882	.079	.47	.429	50
3051682	A4M50R0212B120254	2	4.724	10.000	.079	.47	.429	50
3051683	A4M50R0212B250999	2	9.843	—	.079	.47	.429	50
3867460	A4M50R3S14B020025	3S	.787	.984	.118	.55	.413	50
3867461	A4M50R3S14B025036	3S	.984	1.417	.118	.55	.413	50
2398751	A4M50R0314B036048	3	1.417	1.890	.118	.55	.413	50
2398752	A4M50R0314B042058	3	1.654	2.284	.118	.55	.413	50
2398763	A4M50R0314B052074	3	2.047	2.913	.118	.55	.413	50
2398764	A4M50R0314B068100	3	2.677	3.937	.118	.55	.413	50
2398765	A4M50R0314B090160	3	3.543	6.299	.118	.55	.413	50
2398766	A4M50R0314B130300	3	5.118	11.811	.118	.55	.413	50
2398767	A4M50R0314B290999	3	11.417	—	.118	.55	.413	50
3867462	A4M50R4S14B025035	4S	.984	1.378	.157	.55	.394	50
3867463	A4M50R4S14B035048	4S	1.378	1.890	.157	.55	.394	50
2398775	A4M50R0414B048072	4	1.890	2.835	.157	.55	.394	50
2398776	A4M50R0414B064100	4	2.520	3.937	.157	.55	.394	50
2398777	A4M50R0414B092150	4	3.622	5.906	.157	.55	.394	50
2398778	A4M50R0414B132300	4	5.197	11.811	.157	.55	.394	50
2398779	A4M50R0414B290999	4	11.417	—	.157	.55	.394	50
2398785	A4M50R0519B058094	5	2.284	3.701	.197	.75	.374	50
2398786	A4M50R0519B080136	5	3.150	5.354	.197	.75	.374	50
2398787	A4M50R0519B120300	5	4.724	11.811	.197	.75	.374	50
2398788	A4M50R0519B250999	5	9.843	—	.197	.75	.374	50
3867464	A4M50R5S17B028038	5S	1.102	1.496	.197	.67	.374	50
3867465	A4M50R5S17B038058	5S	1.496	2.284	.197	.67	.374	50
3557175	A4M65R0624B070-112	6	2.756	4.409	.236	.94	.389	65
3557177	A4M65R0624B100-212	6	3.937	8.347	.236	.94	.389	65
3557179	A4M65R0624B200-999	6	7.874	39.331	.236	.94	.389	65
3557181	A4M65R0824B090-200	8	3.543	7.874	.315	.94	.354	65
3557193	A4M65R0824B184-999	8	7.244	39.331	.315	.94	.354	65
3557195	A4M65R1024B100-220	10	3.937	8.661	.394	.94	.329	65
3557197	A4M65R1024B200-999	10	7.874	39.331	.394	.94	.329	65

(continued)

(A4M-B Outboard Sweep continued)



Right hand shown.



order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3867466	**A4M50L2S12B016020**	2S	.630	.787	.079	.47	.429	50
3867467	**A4M50L2S12B020025**	2S	.787	.984	.079	.47	.429	50
3867468	**A4M50L2S12B025036**	2S	.984	1.417	.079	.47	.429	50
3051663	**A4M50L0212B036046**	2	1.417	1.811	.079	.47	.429	50
3051664	**A4M50L0212B042054**	2	1.654	2.126	.079	.47	.429	50
3051665	**A4M50L0212B050064**	2	1.969	2.520	.079	.47	.429	50
3051666	**A4M50L0212B060084**	2	2.362	3.307	.079	.47	.429	50
3051667	**A4M50L0212B080124**	2	3.150	4.882	.079	.47	.429	50
3051668	**A4M50L0212B120254**	2	4.724	10.000	.079	.47	.429	50
3867469	**A4M50L3S14B020025**	3S	.787	.984	.118	.55	.413	50
3867470	**A4M50L3S14B025036**	3S	.984	1.417	.118	.55	.413	50
2398768	**A4M50L0314B036048**	3	1.417	1.890	.118	.55	.413	50
2398769	**A4M50L0314B042058**	3	1.654	2.284	.118	.55	.413	50
2398770	**A4M50L0314B052074**	3	2.047	2.913	.118	.55	.413	50
2398771	**A4M50L0314B068100**	3	2.677	3.937	.118	.55	.413	50
2398772	**A4M50L0314B090160**	3	3.543	6.299	.118	.55	.413	50
2398773	**A4M50L0314B130300**	3	5.118	11.811	.118	.55	.413	50
2398774	**A4M50L0314B290999**	3	11.417	—	.118	.55	.413	50
3867471	**A4M50L4S14B025035**	4S	.984	1.378	.157	.55	.394	50
3867472	**A4M50L4S14B035048**	4S	1.378	1.890	.157	.55	.394	50
2398780	**A4M50L0414B048072**	4	1.890	2.835	.157	.55	.394	50
2398781	**A4M50L0414B064100**	4	2.520	3.937	.157	.55	.394	50
2398782	**A4M50L0414B092150**	4	3.622	5.906	.157	.55	.394	50
2398783	**A4M50L0414B132300**	4	5.197	11.811	.157	.55	.394	50
2398784	**A4M50L0414B290999**	4	11.417	—	.157	.55	.394	50
2398789	**A4M50L0519B058094**	5	2.284	3.701	.197	.75	.374	50
2398790	**A4M50L0519B080136**	5	3.150	5.354	.197	.75	.374	50
2398791	**A4M50L0519B120300**	5	4.724	11.811	.197	.75	.374	50
2398792	**A4M50L0519B250999**	5	9.843	—	.197	.75	.374	50
3867484	**A4M50L5S17B028038**	5S	1.102	1.496	.197	.67	.374	50
3867485	**A4M50L5S17B038058**	5S	1.496	2.284	.197	.67	.374	50
3557176	**A4M65L0624B070-112**	6	2.756	4.409	.236	.94	.389	65
3557178	**A4M65L0624B100-212**	6	3.937	8.347	.236	.94	.389	65
3557180	**A4M65L0624B200-999**	6	7.874	39.331	.236	.94	.389	65
3557182	**A4M65L0824B090-200**	8	3.543	7.874	.315	.94	.354	65
3557194	**A4M65L0824B184-999**	8	7.244	39.331	.315	.94	.354	65
3557196	**A4M65L1024B100-220**	10	3.937	8.661	.394	.94	.329	65
3557198	**A4M65L1024B200-999**	10	7.874	39.331	.394	.94	.329	65

Looking for a product that's not shown in this catalog?
Check the Kennametal website!



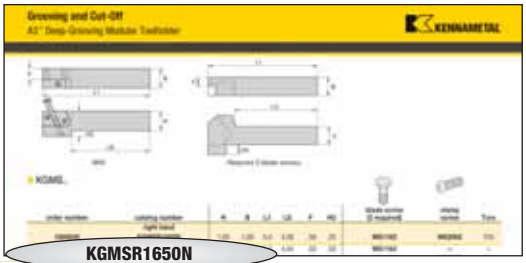
Online product catalog available 24/7

Visit **http://www.kennametal.com/turning/** to browse our electronic catalog any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalog is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Inch

KGM	S	R	16	50	N	

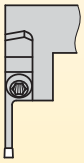
Metric

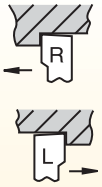
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

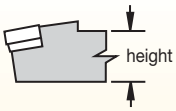
S



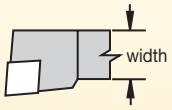
E







shank height in millimeters



shank width in millimeters

square shanks:
The number indicates the toolholder cross section in 1/16" increments.

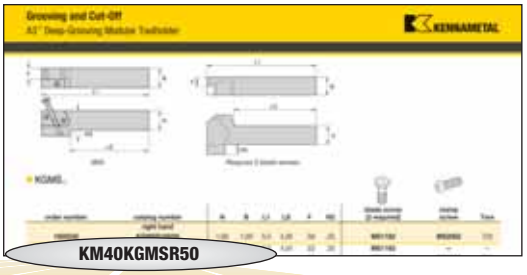
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

N = Inch
M = 150mm
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

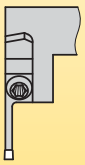


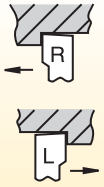
KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S



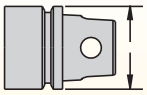
E



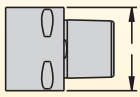


Y = Mazak® INTEGREX® Y-series machines

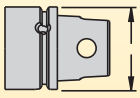
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



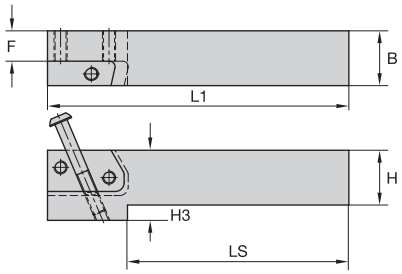
KMXMZ size
KM63XMZ™ = 63mm dia.



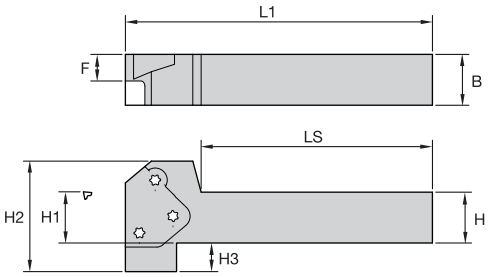


(KM-KGMSR...)

(KM-KGMEL...)



M50
2 blade screws required.

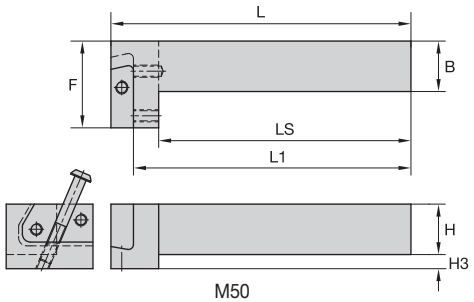


M65
3 blade screws required.

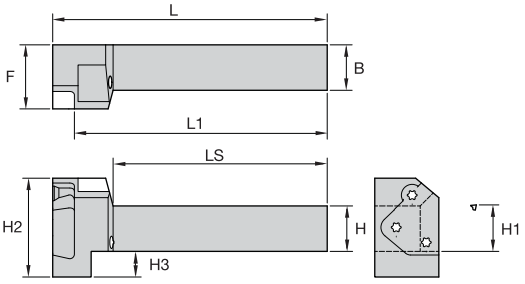
KGMS..

order number	catalog number	H	B	L1	LS	F	H2	H3	blade screw	Torx	clamp screw	Torx
	right hand											
1600245	**KGMSR1650N**	1.00	1.00	5.5	4.26	.56	–	.25	**MS1162**	T25	**MS2002**	T25
3556992	**KGMSR1665N**	1.00	1.00	6.0	4.54	.53	2.09	.50	**MS1163**	T30	**–**	–
1617400	**KGMSR2050N**	1.25	1.25	5.5	–	.81	–	–	**MS1162**	T25	**MS2002**	T25
3557104	**KGMSR2065N**	1.25	1.25	6.0	4.90	.78	2.09	.25	**MS1163**	T30	**–**	–
1903553	**KGMSR2450N**	1.50	1.50	5.5	–	1.06	–	–	**MS1162**	T25	**MS2002**	T25
3557106	**KGMSR2465N**	1.50	1.50	7.0	5.90	1.03	2.09	–	**MS1163**	T30	**–**	–
	left hand											
1600246	**KGMSL1650N**	1.00	1.00	5.5	4.26	.56	–	.25	**MS1162**	T25	**MS2002**	T25
3557103	**KGMSL1665N**	1.00	1.00	6.0	4.54	.53	2.09	.50	**MS1163**	T30	**–**	–
1617591	**KGMSL2050N**	1.25	1.25	5.5	–	.81	–	–	**MS1162**	T25	**MS2002**	T25
3557105	**KGMSL2065N**	1.25	1.25	6.0	4.90	.78	2.09	.25	**MS1163**	T30	**–**	–
1909004	**KGMSL2450N**	1.50	1.50	5.5	–	1.06	–	–	**MS1162**	T25	**MS2002**	T25
3557107	**KGMSL2465N**	1.50	1.50	7.0	5.90	1.03	2.09	–	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades. KGME..: Right-hand holder uses left-hand blades. M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.) M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.) See Modular Blade Assembly Diagrams on pages D118–D119.



M50
2 blade screws required.

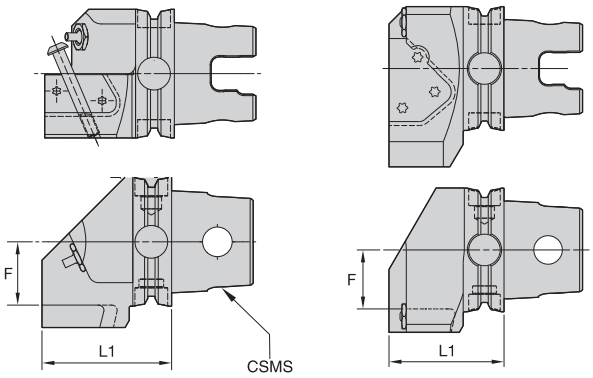


M65
3 blade screws required.

KGME..

order number	catalog number	H	B	L1	LS	F	H2	H3	blade screw	Torx	clamp screw	Torx
	right hand											
1600263	**KGMER1650N**	1.00	1.00	5.5	4.96	1.70	–	.24	**MS1162**	T25	**MS2002**	T25
3557108	**KGMER1665N**	1.00	1.00	5.5	4.70	1.38	2.09	.50	**MS1163**	T30	**–**	–
1617592	**KGMER2050N**	1.25	1.25	5.5	4.96	1.70	–	–	**MS1162**	T25	**MS2002**	T25
3557110	**KGMER2065N**	1.25	1.25	5.5	4.70	1.38	2.09	.25	**MS1163**	T30	**–**	–
1907344	**KGMER2450N**	1.50	1.50	5.5	4.96	1.70	–	–	**MS1162**	T25	**MS2002**	T25
3557112	**KGMER2465N**	1.50	1.50	6.5	5.70	1.50	2.09	–	**MS1163**	T30	**–**	–
	left hand											
1600264	**KGMEL1650N**	1.00	1.00	5.5	4.96	1.70	–	.24	**MS1162**	T25	**MS2002**	T25
3557109	**KGMEL1665N**	1.00	1.00	5.5	4.70	1.38	2.09	.50	**MS1163**	T30	**–**	–
1617593	**KGMEL2050N**	1.25	1.25	5.5	4.96	1.70	–	–	**MS1162**	T25	**MS2002**	T25
3557111	**KGMEL2065N**	1.25	1.25	5.5	4.70	1.38	2.09	.25	**MS1163**	T30	**–**	–
1909003	**KGMEL2450N**	1.50	1.50	5.5	4.96	1.70	–	–	**MS1162**	T25	**MS2002**	T25
3557113	**KGMEL2465N**	1.50	1.50	6.5	5.70	1.50	2.09	–	**MS1163**	T30	**–**	–

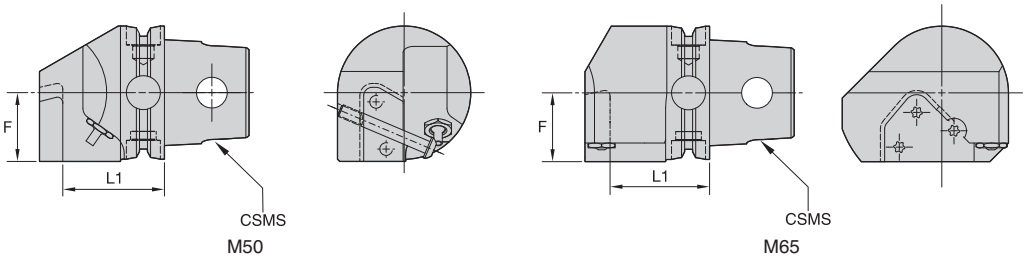
NOTE: KGMS..: Right-hand holder uses right-hand blades. KGME..: Right-hand holder uses left-hand blades. M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.) M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.) See Modular Blade Assembly Diagrams on pages D118–D119.



KM-KGMS..

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
3950268	**KM40TSKGMSR50**	KM40TS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	2.30	23,0	.91	**MS1162**	T25	**MS2002**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	2.11	22,0	.87	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3590203	**KM63TSKGMSR65**	KM63TS	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
3670383	**KM80TSKGMSR50**	KM80TS	66,5	2.62	41,0	1.61	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	2.50	40,0	1.57	**MS1163**	T30	**–**	–
	left hand									
3950267	**KM40TSKGMSL50**	KM40TS	53,5	2.11	15,0	.59	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	2.30	23,0	.91	**MS1162**	T25	**MS2002**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	2.11	22,0	.87	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3590204	**KM63TSKGMSL65**	KM63TS	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
3670371	**KM80TSKGMSL50**	KM80TS	66,5	2.62	41,0	1.61	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	2.50	40,0	1.57	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D118–D119.

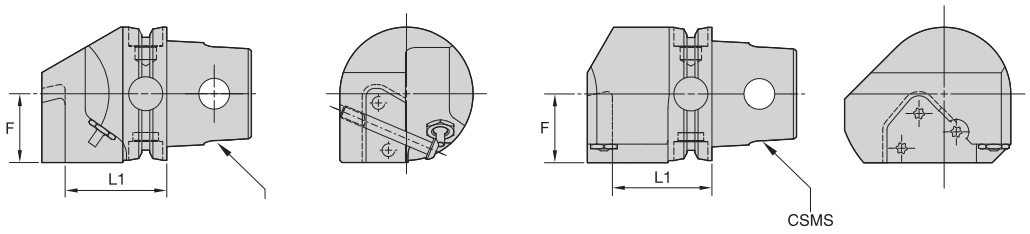


KM-KGME..

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
3950266	**KM40TSKGMER50**	KM40TS	28,0	1.10	20,5	.81	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	1.50	25,5	1.00	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	1.85	25,5	1.00	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	1.89	32,5	1.28	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	1.85	32,5	1.28	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	2.28	40,5	1.59	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	2.24	40,5	1.59	**MS1163**	T30	**–**	–

(continued)

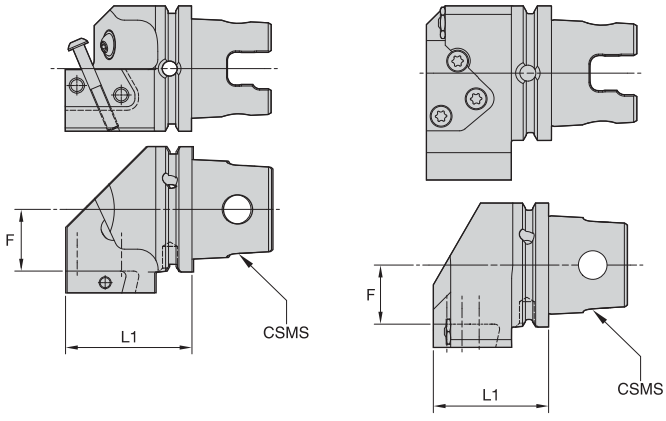
(KM-KGME.. continued)



M50 M65

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	left hand									
3950265	**KM40TSKGMEL50**	KM40TS	28,0	1.10	20,5	.81	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	1.50	25,5	1.00	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	1.85	25,5	1.00	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	1.89	32,5	1.28	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	1.85	32,5	1.28	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	2.28	40,5	1.59	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	2.24	40,5	1.59	**MS1163**	T30	**–**	–

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D118–D119.

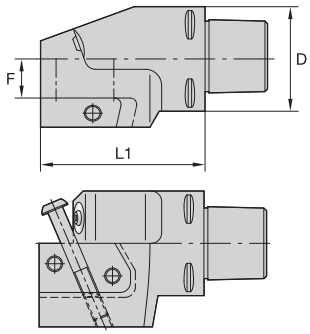


M50 M65

KM-XMZKGMS..

order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–
	left hand									
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	2.50	31,0	1.22	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	2.30	30,0	1.18	**MS1163**	T30	**–**	–

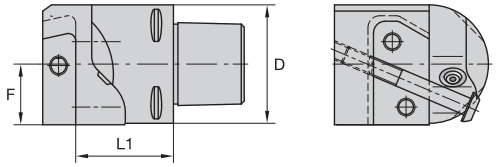
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on page D118–D119.



C-KGMS

order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756576	**C4KGMSR50**	40	1.57	63,5	2.50	10	.39	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	1.97	63,5	2.50	15	.59	**MS1162**	T25	**MS2002**	T25
	left hand										
1756578	**C4KGMSL50**	40	1.57	63,5	2.50	10	.39	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	1.97	63,5	2.50	15	.59	**MS1162**	T25	**MS2002**	T25

NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
Blade and clamp screw torque 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D118–D119.



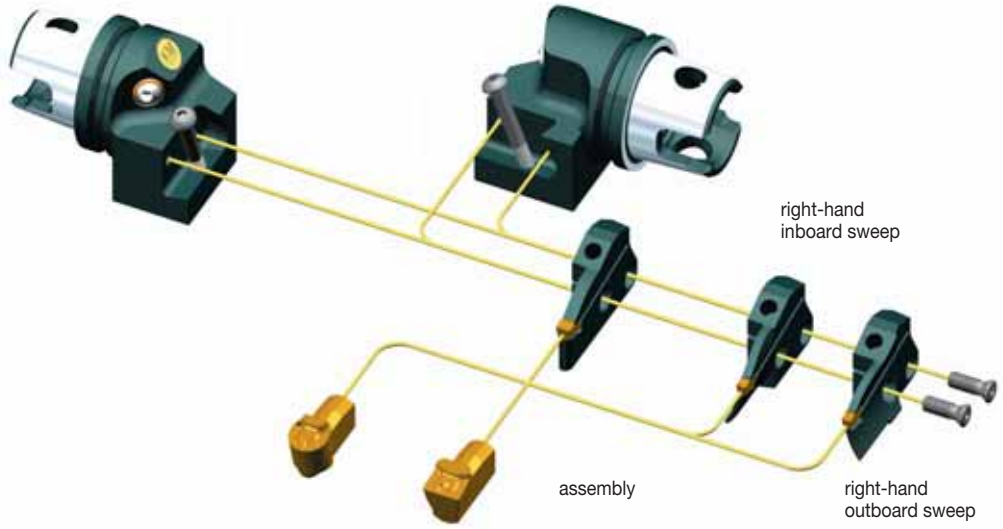
C-KGME

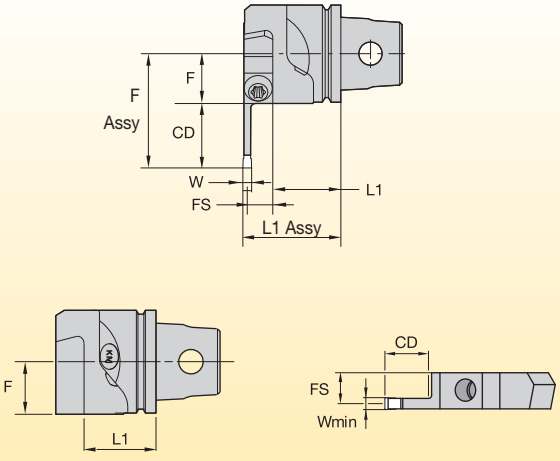
order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756579	**C4KGMER50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**MS2002**	T25
	left hand										
1756583	**C4KGMEL50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**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 8–10 Nm (71–88 in. lbs.).
See Modular Blade Assembly Diagrams on pages D118–D119.

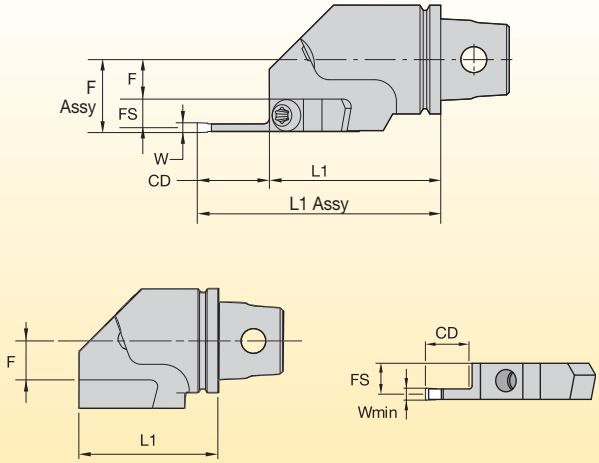
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





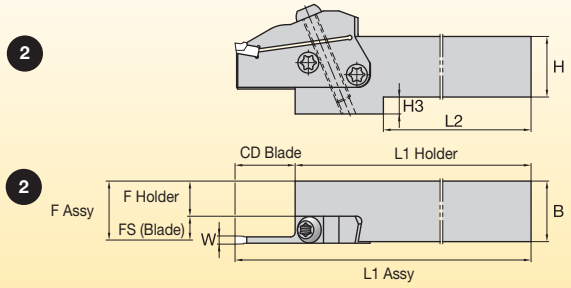
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

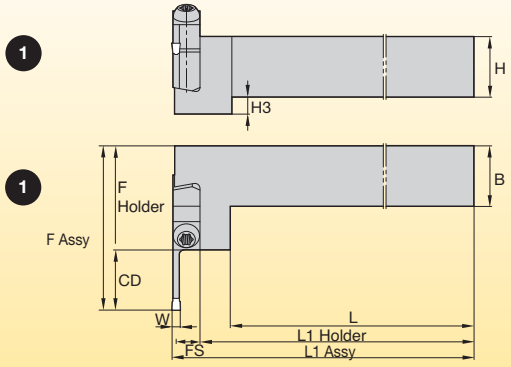
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



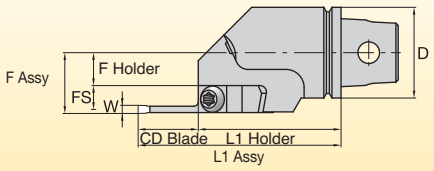
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



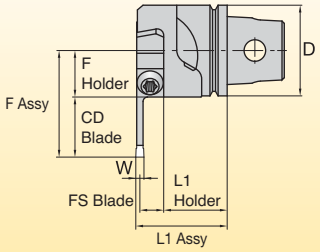
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



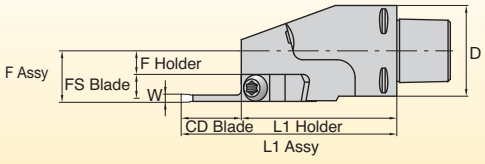
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



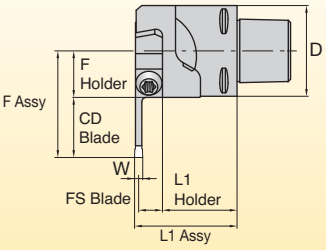
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

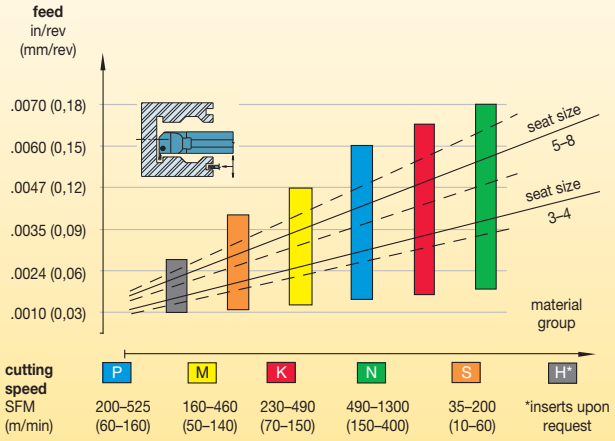
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

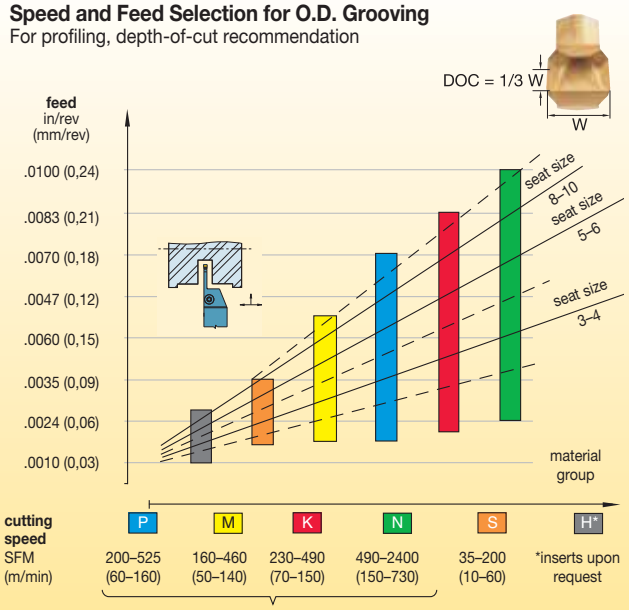
Application Guidelines

Speed and Feed Selection for I.D. and Face Grooving



Speed and Feed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

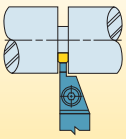


For radial grooving under stable conditions, feed can be increased by up to 50%.

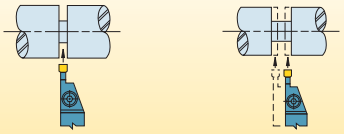
Tool Application Guidelines

- 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

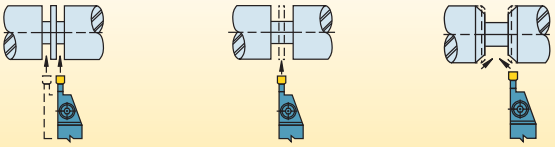


Deep Grooves Slightly Wider than the Tool



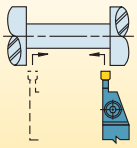
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

Extra-Wide Deep Grooves



1. Plunge out both sides of the groove width.
2. Plunge center area to remove web of remaining material.
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.

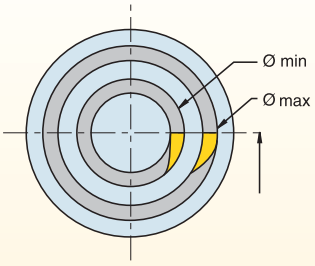
Finish Turning of the Groove/Light Profiling



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.

Grooving Tool Failure and Solution Guide

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

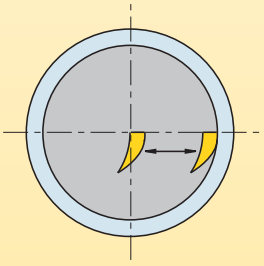
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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 O.D. to the I.D.

Practical Solutions to Grooving Problems

problem	remedy
burr	1. Verify tool center height. 2. Use sharp tools (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 tools (index more often). 3. Dwell time in bottom 1–3 revolutions (max). 4. Use proper chip control geometry. 5. Increase coolant flow. 6. Verify proper setup (overhang, shank size). 7. Use correct geometry (e.g., positive rake for workhardening material).
groove bottom not flat	1. Use sharp tools (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. Verify tool center height.
poor chip control	1. Use sharp tools (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. Verify 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 inserts (index more often).



Top Notch™ Grooving Tools and Beyond™ Inserts for Your Shallow Groove and Turn Operations

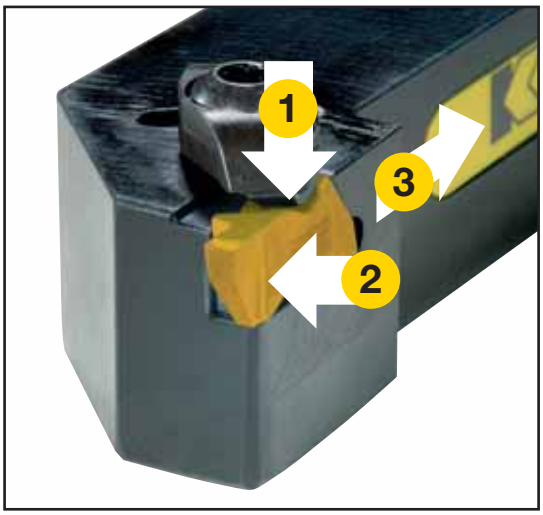
Primary Application

Top Notch Grooving is the proven solution for high productivity. The Top Notch system provides consistent tool performance, accurate indexing, and superior clamping to provide excellent surface finishing and superior tool life.

Features and Benefits

- The Beyond PVD coated grades are designed to cut a variety of workpiece materials.
- 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 chip control in multidirectional 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.

Step 1 • Select system based on the required groove depth

What you need to know:

- Groove depth, width, and profile.
- Material to be machined.
- Application to be performed (face, O.D., or I.D. grooving).
- Toolholder requirements (e.g., KM™, square shank, right/left).

Top Notch™



Grooving
For grooving depth ≤1.5x grooving width, review system capability chart and proceed to Step 2.

A3™ or A4™



Deep Grooving
For grooving depth ≥1.5x grooving width, see A3 Deep Grooving page D26 or A4 Grooving and Turning page D70.

Top Notch Grooving for Internal, External, and Face Grooving Applications

system capabilities		minimum in (mm)	maximum in (mm)
O.D./I.D. grooving	width	.031 (0,79)	.375 (9,53)
	depth	.050 (1,27)	.375 (9,53)
face grooving	width	.125 (3,18)	.375 (9,53)
	depth	.150 (3,81)	.250 (6,35)
internal grooving	diameter	.440 (11,2)	—
face grooving diameter	standard	.940 (23,9)	—
	deep	1.875 (47,6)	—
deep O.D./I.D. grooving	width	.062 (1,57)	.250 (6,35)
	depth	.125 (3,18)	.500 (12,70)
deep face grooving	width	.125 (3,18)	.250 (6,35)
	depth	.250 (6,35)	.500 (12,70)



Step 2 • Select 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.

O.D. and face grooving applications .....see pages D146–D149
I.D. grooving applications .....see pages D150–D154

Step 3 • Select chipbreaker style and feed rate

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



workpiece material and application	P	M	K	N	S	H
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-ST CBN tipped .002–.004 (0,05–0,10)
alternate 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
		

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

machining condition	workpiece material P	M	K	N	S	H
high-performance for optimal conditions (clean cuts, good machine condition, higher speed capability)	KC9110 400–1200 (120–370)	KCU10/KC5010 250–750 (80–230)	KC9320 400–1200 (120–370)	KD1425 800–10000 (240–3050)	KCU10/KC5010 50–400 (20–120)	KB5625 250–500 (80–150)
	KT315 330–750 (100–230)	KT315 230–650 (70–200)	KC5010 250–750 (80–230)	–	–	–
general purpose (first choice for general machining)	KC9110 400–1000 (120–300)	KCU25/KC5025 160–400 (50–120)	KC9110 400–1000 (120–300)	KC5410 500–3000 (150–910)	KCU25/KC5025 35–200 (10–60)	KB5625 250–500 (80–150)
unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed, I.D. grooving)	KCU25/KC5025 180–450 (50–140)	KCU25/KC5025 130–300 (40–90)	KC5025 200–500 (60–300)	KCU25/KC5025 200–1000 (60–300)	KCU25/KC5025 35–150 (10–50)	KB1630 200–350 (60–110)

Step 5 • Select insert and holder from catalog page

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

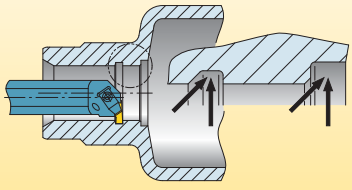
Example for Top Notch • Grooving

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

Recommendation

Insert.....NG2M300RK
Grade KC5025
Insert width ..... .118" (3mm)
Insert size 2

Toolholder.....A20QNNTOL2 (metric)
A12NEL2 (inch)
Gage insert N.2R



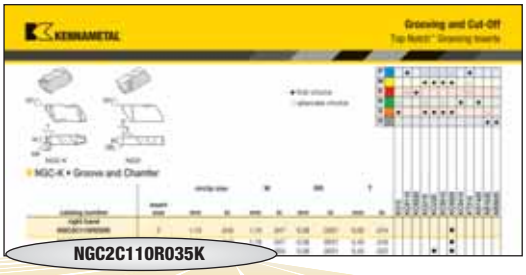
Speed: 400 SFM (120 m/min)
Feed: .006 in/rev (0,15 mm/rev)

Congratulations!

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

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Metric

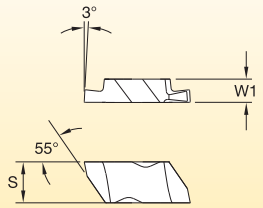
N	G	C	2	C	110	R	035	K	
Type of Insert	Insert Style	Additional Information	Insert Size	Size Identification	Groove Size**	Hand of Insert	Cutting Depth	Chipbreaker Design	Definition of Inserts
N = Top Notch	**B** = Blank (for special forms) **F** = Face grooving **G** = Grooving **P** = Back turning **R** = Full radius **U** = Undercutting (or relieving) **V** = Poly-Vee	**D** = Deep grooving **P** = Positive **C** = Groove and chamfer	See table below	**M** = Metric insert groove width **C** = Circlip groove insert width is nominal circlip size □= Blank indicates inch width insert	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" or 0,01mm. **Inch example:** 1/32" width groove or radius equals "031" catalog position number. **Metric example:** 3,25mm width groove or radius equals "325" catalog position number. **Width tolerance:** ± .001" (± 0,025mm) unless otherwise specified	**L** = Left hand **R** = Right hand	Shown for groove and chamfer inserts in 0,01mm increments	**E** = Hone only **K** = Standard chip control **S** = T Land and Hone **ST** = STD Tip (PCBN)	Groove size "J" or "L" for Poly-Vee inserts "I" indicates internal face grooving insert

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

*Kennametal proprietary identification system.

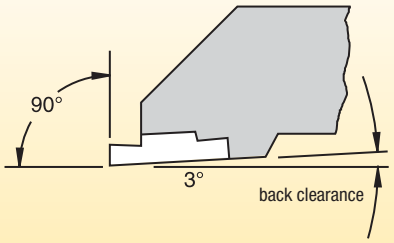
**Omit position for Top Notch NB-style blanks.

Top Notch Threading and Grooving Insert Dimensions



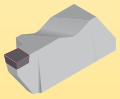
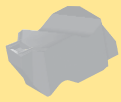
insert size	S mm	S inch	W1 mm	W1 inch
1	2,54	.100	2,54	.100
2	5,56	.219	3,81	.150
3	8,74	.344	4,95	.195
4	11,51	.453	6,48	.255
5	17,48	.688	9,65	.380
6	11,51	.453	9,73	.383
8	7,93	.312	11,13	.438

Top Notch Holder Design

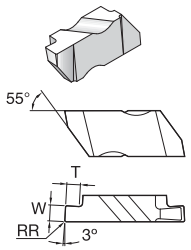


NOTE: Holders are designed to locate insert inclined to 3° to provide back clearance down open side.

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

insert style	application	rake angle	page(s)
NG 	• General-purpose grooving. • O-ring grooving. • Circlip grooving.	neutral	D128
NG-K 	• Chip control geometry. • General-purpose grooving. • O-ring grooving. • Circlip grooving. • Light turning.	10° positive	D130
NG-ST 	• Hard turning.	neutral	D142
NGC-K 	• Combined groove and chamfered edge break in one positive plunge with chip control. • Designed for DIN 471/472 standard circlip grooves.	10° positive	D133
NGD 	• Deep grooving.	neutral	D133
NGD-K 	• Chip control geometry. • Deep grooving. • Light turning.	10° positive	D134
NGP 	• General-purpose grooving. • O-ring grooving. • Circlip grooving.	5° positive	D135
NF 	• Face grooving. • Additional side clearance.	neutral	D135
NF-K 	• Face grooving with chip control. • Additional side clearance.	10° positive	D136
NFD-K 	• Deep face grooving with chip control. • Additional side clearance.	10° positive	D136

insert style	application	rake angle	page(s)
NFD-KI 	• Internal deep face grooving with chip control. • For use in boring bars for internal face grooves.	10° positive	D136
NP-K NPD-K 	• Turning. • Back turning positive. • Profiling with chip control.	10° positive	D137
NR 	• Full radius grooving. • Turning profiling.	neutral	D138
NR-K 	• Chip control geometry. • Full radius grooving turning profiling.	10° positive	D140
NRD 	• Deep grooving. • Full radius endform.	neutral	D141
NRP 	• Full radius grooving. • Light-turning profiling.	5° positive	D140
NU 	• Undercutting.	neutral	D141
NV 	• Poly Vee grooving.	neutral	D141
NB/NBD 	• Blanks. • Blanks for deep grooving. • Available only in uncoated grades.	—	D142



● first choice
○ alternate choice

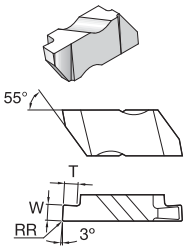
P			●		○	○	○	○		●														
M					●	●	●	●		○														
K			○	●						○														
N		○			○		○		●		●													
S		●			●	●	●	●				○												
H												●	●											

NG • Grooving Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NG2031R	2	0,79	.031	–	–	0,09	.0035	1,27	.050	●			●	●	●	●					
NG2041R	2	1,04	.041	–	–	0,09	.0035	1,27	.050	●			●	●	●	●					
NG2047R	2	1,19	.047	–	–	0,09	.0035	1,27	.050				●	●	●	●					
NG2058R	2	1,47	.058	–	–	0,19	.0075	1,27	.050					●		●					
NG2062R	2	1,58	.062	–	–	0,19	.0075	2,79	.110	●			●	●	●	●					
NG2094R	2	2,39	.094	–	–	0,19	.0075	2,79	.110	●			●	●	●	●					
NG2125R	2	3,18	.125	–	–	0,19	.0075	2,79	.110				●	●	●	●					
NG3047R	3	1,19	.047	–	–	0,19	.0075	1,91	.075	●	●		●	●	●	●					
NG3062R	3	1,58	.062	–	–	0,19	.0075	2,39	.094	●	●		●	●	●	●			●	●	
NG3072R	3	1,83	.072	–	–	0,19	.0075	2,39	.094				●		●						
NG3078R	3	1,98	.078	–	–	0,19	.0075	2,39	.094				●		●						
NG3088R	3	2,24	.088	–	–	0,19	.0075	2,39	.094				●	●	●	●					
NG3094R	3	2,39	.094	–	–	0,19	.0075	3,81	.150	●	●		●	●	●	●			●	●	
NG3097R	3	2,46	.097	–	–	0,32	.0125	3,81	.150				●	●	●	●					
NG3105R	3	2,67	.105	–	–	0,19	.0075	3,81	.150				●	●	●	●					
NG3110R	3	2,79	.110	–	–	0,32	.0125	3,81	.150					●		●					
NG3122R	3	3,10	.122	–	–	0,19	.0075	3,81	.150					●		●					
NG3125R	3	3,18	.125	–	–	0,19	.0075	3,81	.150	●	●		●	●	●	●			●	●	
NG3142R	3	3,61	.142	–	–	0,32	.0125	3,81	.150					●	●	●					
NG3156R	3	3,96	.156	–	–	0,19	.0075	3,81	.150				●	●	●	●					
NG3178R	3	4,52	.178	–	–	0,19	.0075	3,81	.150							●					
NG3185R	3	4,70	.185	–	–	0,57	.0225	3,81	.150					●		●					
NG3189R	3	4,80	.189	–	–	0,57	.0225	3,81	.150	●			●	●	●	●			●		
NG4125R	4	3,18	.125	–	–	0,19	.0075	3,81	.150	●			●	●	●	●					
NG4189R	4	4,80	.189	–	–	0,57	.0225	6,35	.250	●	●		●	●	●	●				●	
NG4213R	4	5,41	.213	–	–	0,19	.0075	6,35	.250					●		●					
NG4219R	4	5,56	.219	–	–	0,57	.0225	6,35	.250							●					
NG4250R	4	6,35	.250	–	–	0,57	.0225	6,35	.250	●	●		●	●	●	●					
NG5250R	5	6,35	.250	–	–	0,57	.0225	9,52	.375							●					
NG5312R	5	7,93	.312	–	–	0,83	.0325	9,52	.375					●		●					
NG5375R	5	9,53	.375	–	–	0,83	.0325	9,52	.375							●					
NG6281R	6	7,14	.281	–	–	0,83	.0325	6,35	.250					●		●					
NG6375R	6	9,53	.375	–	–	0,83	.0325	6,35	.250					●		●					

(continued)

(NG • Grooving Inserts continued)

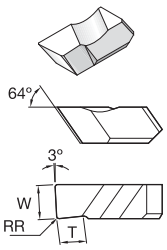


● first choice
○ alternate choice

P			●		○	○	○	○		●												
M					●	●	●	●		○												
K			○	●						○												
N		○			○		○		●		●											
S		●			●	●	●	●				○										
H												●	●									

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC6410	KT315	KD1425	KB1630	KB5625
left hand																					
NG2031L	2	0,79	.031	—	—	0,09	.0035	1,27	.050	●			●	●	●	●					
NG2041L	2	1,04	.041	—	—	0,09	.0035	1,27	.050					●	●	●					
NG2047L	2	1,19	.047	—	—	0,09	.0035	1,27	.050				●	●	●	●					
NG2058L	2	1,47	.058	—	—	0,19	.0075	1,27	.050					●	●	●					
NG2062L	2	1,58	.062	—	—	0,19	.0075	2,79	.110	●			●	●	●	●					
NG2094L	2	2,39	.094	—	—	0,19	.0075	2,79	.110	●			●	●	●	●					
NG2125L	2	3,18	.125	—	—	0,19	.0075	2,79	.110				●	●	●	●					
NG3047L	3	1,19	.047	—	—	0,19	.0075	1,91	.075	●			●	●	●	●					
NG3062L	3	1,58	.062	—	—	0,19	.0075	2,39	.094	●			●	●	●	●			●	●	
NG3072L	3	1,83	.072	—	—	0,19	.0075	2,39	.094				●		●						
NG3078L	3	1,98	.078	—	—	0,19	.0075	2,39	.094				●		●						
NG3088L	3	2,24	.088	—	—	0,19	.0075	2,39	.094				●	●	●	●					
NG3094L	3	2,39	.094	—	—	0,19	.0075	3,81	.150	●	●		●	●	●	●			●	●	
NG3097L	3	2,46	.097	—	—	0,32	.0125	3,81	.150				●	●	●	●					
NG3105L	3	2,67	.105	—	—	0,19	.0075	3,81	.150				●	●	●	●					
NG3110L	3	2,79	.110	—	—	0,32	.0125	3,81	.150					●		●					
NG3122L	3	3,10	.122	—	—	0,19	.0075	3,81	.150					●		●					
NG3125L	3	3,18	.125	—	—	0,19	.0075	3,81	.150	●	●		●	●	●	●			●	●	
NG3142L	3	3,61	.142	—	—	0,32	.0125	3,81	.150				●	●	●	●					
NG3156L	3	3,96	.156	—	—	0,19	.0075	3,81	.150					●	●	●					
NG3178L	3	4,52	.178	—	—	0,19	.0075	3,81	.150					●		●					
NG3185L	3	4,70	.185	—	—	0,57	.0225	3,81	.150							●					
NG3189L	3	4,80	.189	—	—	0,57	.0225	3,81	.150	●	●		●	●	●	●			●		
NG4125L	4	3,18	.125	—	—	0,19	.0075	3,81	.150	●			●	●	●	●					
NG4189L	4	4,80	.189	—	—	0,57	.0225	6,35	.250	●			●	●	●	●				●	
NG4250L	4	6,35	.250	—	—	0,57	.0225	6,35	.250	●			●	●	●	●					
NG5312L	5	7,93	.312	—	—	0,83	.0325	9,52	.375							●					
NG6375L	6	9,53	.375	—	—	0,83	.0325	6,35	.250							●					

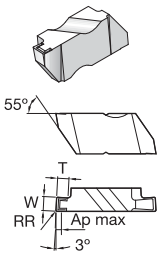
NOTE: All KD and KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.



NG-1L

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in
left hand									
NG1031L	1	0,79	.031	—	—	0,19	.0075	1,27	.050
NG1047L	1	1,19	.047	—	—	0,19	.0075	1,91	.075
NG1062L	1	1,58	.062	—	—	0,19	.0075	1,91	.075
NG1094L	1	2,39	.094	—	—	0,19	.0075	1,91	.075

NOTE: Inserts have one cutting edge.
Width tolerance is ± .003 on NG-1L inserts.



● first choice
○ alternate choice

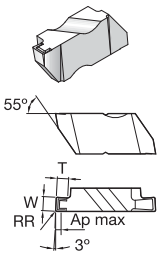
P			●		○	○	○	○		●														
M					●	●	●	●		○														
K			○	●						○														
N		○			○		○		●		●													
S		●			●	●	●	●				○												
H												●	●											

NG-K • Grooving Inserts with Chip Control

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NG2M050RK	2	0,50	.020	0,64	.025	0,09	.0035	0,64	.025					●	●	●					
NG2031RK	2	0,79	.031	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●		●			
NG2M080RK	2	0,80	.032	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M100RK	2	1,00	.039	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2047RK	2	1,19	.047	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●		●			
NG2M120RK	2	1,20	.047	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M140RK	2	1,40	.055	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M150RK	2	1,50	.059	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2062RK	2	1,58	.062	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●		●			
NG2M170RK	2	1,70	.067	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M175RK	2	1,75	.069	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M195RK	2	1,95	.077	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M200RK	2	2,00	.079	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●		●			
NG2M220RK	2	2,20	.087	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M225RK	2	2,25	.088	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2094RK	2	2,39	.094	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●		●			
NG2M250RK	2	2,50	.098	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M275RK	2	2,75	.108	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M300RK	2	3,00	.118	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2125RK	2	3,18	.125	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●		●			
NG2M325RK	2	3,25	.128	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG3M100RK	3	1,00	.039	0,76	.030	0,19	.0075	1,91	.075					●		●					
NG3047RK	3	1,19	.047	0,76	.030	0,19	.0075	1,91	.075		●		●	●	●	●					
NG3M120RK	3	1,20	.047	0,76	.030	0,19	.0075	1,91	.075				●	●	●	●					
NG3M150RK	3	1,50	.059	1,02	.040	0,19	.0075	2,39	.094			●		●		●		●			
NG3062RK	3	1,58	.062	1,02	.040	0,19	.0075	2,39	.094		●	●	●	●	●	●		●			
NG3M175RK	3	1,75	.069	1,02	.040	0,19	.0075	2,39	.094					●		●					
NG3072RK	3	1,83	.072	1,02	.040	0,19	.0075	2,39	.094				●	●	●	●					
NG3078RK	3	1,98	.078	1,02	.040	0,19	.0075	2,39	.094		●		●	●	●	●					
NG3M200RK	3	2,00	.079	1,02	.040	0,19	.0075	2,39	.094		●	●		●		●		●			
NG3M220RK	3	2,20	.087	1,02	.040	0,19	.0075	2,39	.094					●		●					
NG3M225RK	3	2,24	.088	1,02	.040	0,19	.0075	2,39	.094		●	●	●	●	●	●					
NG3094RK	3	2,39	.094	1,02	.040	0,19	.0075	3,81	.150		●		●	●	●	●		●			
NG3M250RK	3	2,50	.098	1,02	.040	0,19	.0075	3,81	.150		●	●		●		●		●			
NG3M275RK	3	2,75	.108	1,02	.040	0,19	.0075	3,81	.150				●	●	●	●					
NG3M300RK	3	3,00	.118	1,02	.040	0,19	.0075	3,81	.150		●	●	●	●	●	●		●			
NG3125RK	3	3,18	.125	1,02	.040	0,19	.0075	3,81	.150		●		●	●	●	●		●			
NG3M320RK	3	3,20	.126	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG3M325RK	3	3,25	.128	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG3M350RK	3	3,50	.138	2,92	.115	0,32	.0125	3,81	.150					●		●		●			
NG3156RK	3	3,96	.156	2,92	.115	0,19	.0075	3,81	.150				●	●	●	●					
NG3M400RK	3	3,99	.157	2,92	.115	0,32	.0125	3,81	.150		●	●	●	●	●	●		●			
NG3M425RK	3	4,24	.167	2,92	.115	0,32	.0125	3,81	.150				●	●	●	●					
NG3M450RK	3	4,50	.177	2,92	.115	0,32	.0125	3,81	.150					●		●					
NG3189RK	3	4,80	.189	2,92	.115	0,57	.0225	3,81	.150		●	●	●	●	●	●		●			

(continued)

(NG-K • Grooving Inserts with Chip Control continued)



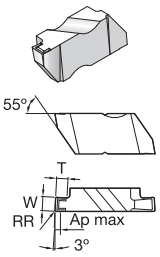
● first choice
○ alternate choice

P		●		○	○	○	○		●																
M				●	●	●	●		○																
K		○	●						○																
N	○			○		○		●		●															
S	●			●	●	●	●				○														
H											●	●													

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG4M300RK	4	3,00	.118	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG4125RK	4	3,18	.125	1,02	.040	0,19	.0075	3,81	.150				●	●	●	●					
NG4M350RK	4	3,50	.138	2,92	.115	0,57	.0225	6,35	.250		●	●		●		●					
NG4M400RK	4	4,00	.158	2,92	.115	0,57	.0225	6,35	.250			●	●	●	●	●					
NG4M450RK	4	4,50	.177	2,92	.115	0,57	.0225	6,35	.250					●		●					
NG4189RK	4	4,80	.189	2,92	.115	0,57	.0225	6,35	.250		●		●	●	●	●					
NG4M500RK	4	5,00	.197	2,92	.115	0,32	.0125	6,35	.250		●	●	●	●	●	●					
NG4M550RK	4	5,50	.217	3,81	.150	0,57	.0225	6,35	.250					●		●					
NG4M600RK	4	6,00	.236	3,81	.150	0,57	.0225	6,35	.250		●	●		●		●					
NG4250RK	4	6,35	.250	3,81	.150	0,57	.0225	6,35	.250				●	●	●	●					
left hand																					
NG2M050LK	2	0,50	.020	0,64	.025	0,09	.0035	0,64	.025						●	●					
NG2031LK	2	0,79	.031	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●		●			
NG2M080LK	2	0,80	.032	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M100LK	2	1,00	.039	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2047LK	2	1,19	.047	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M120LK	2	1,20	.047	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M140LK	2	1,40	.055	0,76	.030	0,09	.0035	1,27	.050				●	●	●	●					
NG2M150LK	2	1,50	.059	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2062LK	2	1,58	.062	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M170LK	2	1,70	.067	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M175LK	2	1,75	.069	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M195LK	2	1,95	.077	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M200LK	2	2,00	.079	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M220LK	2	2,20	.087	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M225LK	2	2,25	.088	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2094LK	2	2,39	.094	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M250LK	2	2,50	.098	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG2M275LK	2	2,75	.108	1,09	.043	0,19	.0075	2,79	.110					●	●	●					
NG2M300LK	2	3,00	.118	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2125LK	2	3,18	.125	1,09	.043	0,19	.0075	2,79	.110				●	●	●	●					
NG2M325LK	2	3,25	.128	1,09	.043	0,19	.0075	2,79	.110					●		●					
NG3M100LK	3	1,00	.039	0,76	.030	0,19	.0075	1,91	.075					●		●					
NG3047LK	3	1,19	.047	0,76	.030	0,19	.0075	1,91	.075				●	●	●	●					
NG3M120LK	3	1,20	.047	0,76	.030	0,19	.0075	1,91	.075				●	●	●	●					
NG3M150LK	3	1,50	.059	1,02	.040	0,19	.0075	2,39	.094		●	●		●		●					
NG3062LK	3	1,58	.062	1,02	.040	0,19	.0075	2,39	.094			●	●	●	●	●		●			
NG3M175LK	3	1,75	.069	1,02	.040	0,19	.0075	2,39	.094					●		●					
NG3072LK	3	1,83	.072	1,02	.040	0,19	.0075	2,39	.094				●	●	●	●					
NG3078LK	3	1,98	.078	1,02	.040	0,19	.0075	2,39	.094				●	●	●	●					
NG3M200LK	3	2,00	.079	1,02	.040	0,19	.0075	2,39	.094			●		●		●					
NG3M220LK	3	2,20	.087	1,02	.040	0,19	.0075	2,39	.094					●		●					
NG3M225LK	3	2,24	.088	1,02	.040	0,19	.0075	2,39	.094		●	●	●	●	●	●					
NG3094LK	3	2,39	.094	1,02	.040	0,19	.0075	3,81	.150		●		●	●	●	●		●			

(continued)

(NG-K • Grooving Inserts with Chip Control continued)

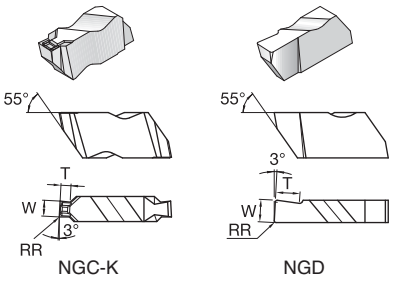


● first choice
○ alternate choice

P			●		○	○	○	○		●														
M					●	●	●	●		○														
K			○	●						○														
N		○			○		○		●		●													
S		●			●	●	●	●				○												
H												●	●											

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG3M250LK	3	2,50	.098	1,02	.040	0,19	.0075	3,81	.150		●	●		●		●					
NG3M275LK	3	2,75	.108	1,02	.040	0,19	.0075	3,81	.150				●	●	●	●					
NG3M300LK	3	3,00	.118	1,02	.040	0,19	.0075	3,81	.150		●	●	●	●	●	●					
NG3125LK	3	3,18	.125	1,02	.040	0,19	.0075	3,81	.150		●		●	●	●	●					
NG3M320LK	3	3,20	.126	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG3M325LK	3	3,25	.128	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG3M350LK	3	3,50	.138	2,92	.115	0,32	.0125	3,81	.150					●		●					
NG3156LK	3	3,96	.156	2,92	.115	0,19	.0075	3,81	.150				●	●	●	●					
NG3M400LK	3	3,99	.157	2,92	.115	0,32	.0125	3,81	.150		●	●	●	●	●	●					
NG3M425LK	3	4,25	.167	2,92	.115	0,32	.0125	3,81	.150				●	●	●	●					
NG3M450LK	3	4,50	.177	2,92	.115	0,32	.0125	3,81	.150					●		●					
NG3189LK	3	4,80	.189	2,92	.115	0,57	.0225	3,81	.150		●	●	●	●	●	●					
NG4M300LK	4	3,00	.118	1,02	.040	0,19	.0075	3,81	.150					●		●					
NG4125LK	4	3,18	.125	1,02	.400	0,19	.0075	3,81	.150				●	●	●	●					
NG4M350LK	4	3,50	.138	2,92	.115	0,57	.0225	6,35	.250		●	●		●		●					
NG4M400LK	4	4,00	.158	2,92	.115	0,57	.0225	6,35	.250		●	●	●	●	●	●					
NG4M450LK	4	4,50	.177	2,92	.115	0,57	.0225	6,35	.250							●					
NG4189LK	4	4,80	.189	2,92	.115	0,57	.0225	6,35	.250		●		●	●	●	●					
NG4M500LK	4	5,00	.197	2,92	.115	0,32	.0125	6,35	.250		●	●	●	●	●	●					
NG4M550LK	4	5,50	.217	3,81	.150	0,57	.0225	6,35	.250					●		●					
NG4M600LK	4	6,00	.236	3,81	.150	0,57	.0225	6,35	.250			●		●		●					
NG4250LK	4	6,35	.250	3,81	.150	0,57	.0225	6,35	.250				●	●	●	●					

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



● first choice
○ alternate choice

P			●		○	○	○	○		●														
M					●	●	●	●		○														
K			○	●						○														
N		○			○		○		●		●													
S		●			●	●	●	●																
H																								

NGC-K • Groove and Chamfer

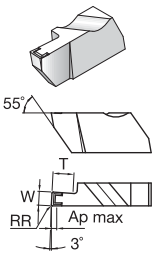
catalog number	insert size	circlip size mm	circlip size in	W mm	W in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGC2C110R035K	2	1,10	.043	1,19	.047	0,08	.0031	0,35	.014							●					
NGC2C110R040K	2	1,10	.043	1,19	.047	0,08	.0031	0,40	.016							●					
NGC2C130R055K	2	1,30	.051	1,39	.055	0,08	.0031	0,55	.022					●		●					
NGC2C160R070K	2	1,60	.063	1,69	.067	0,08	.0031	0,70	.028							●					
NGC2C160R100K	2	1,60	.063	1,69	.067	0,08	.0031	1,00	.039							●					
NGC2C185R100K	2	1,85	.073	1,94	.076	0,08	.0031	1,00	.039							●					
NGC2C185R125K	2	1,85	.073	1,94	.076	0,08	.0031	1,25	.049							●					
NGC2C215R150K	2	2,15	.085	2,24	.088	0,08	.0031	1,50	.059					●		●					
NGC2C265R150K	2	2,65	.104	2,74	.108	0,08	.0031	1,50	.059							●					
left hand																					
NGC2C110L040K	2	1,10	.043	1,19	.047	0,08	.0031	0,40	.016							●					
NGC2C130L055K	2	1,30	.051	1,39	.055	0,08	.0031	0,55	.022					●		●					
NGC2C160L070K	2	1,60	.063	1,69	.067	0,08	.0031	0,70	.028							●					
NGC2C185L125K	2	1,85	.073	1,94	.076	0,08	.0031	1,25	.049					●		●					
NGC2C215L150K	2	2,15	.085	2,24	.088	0,08	.0031	1,50	.059					●		●					
NGC2C265L150K	2	2,65	.104	2,74	.108	0,08	.0031	1,50	.059							●					
NGC2C265L175K	2	2,65	.104	2,74	.108	0,08	.0031	1,75	.069					●		●					

NOTE: Groove and chamfer inserts for circlip grooves to DIN 471/472 specification.
Right-hand insert shown; left-hand insert is mirror image.

NGD • Deep Grooving Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGD3189R	3	4,80	.189	—	—	0,57	.0225	6,35	.250	●			●		●						
NGD4250R	4	6,35	.250	—	—	0,57	.0225	12,70	.500	●			●		●						
left hand																					
NGD3189L	3	4,80	.189	—	—	0,57	.0225	6,35	.250	●			●		●						
NGD4250L	4	6,35	.250	—	—	0,57	.0225	12,70	.500	●			●		●						

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



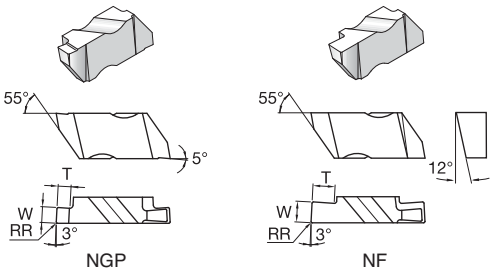
● first choice
○ alternate choice

		K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P			●		○	○	○	○		●			
M					●	●	●	●		○			
K			○	●						○			
N		○			○		○		●		●		
S		●			●	●	●	●				○	
H												●	●

NGD-K • Deep-Grooving Inserts with Chip Control

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGD2M150RK	2	1,50	.059	1,09	.043	0,19	.0075	4,06	.160						●	●					
NGD2M200RK	2	2,00	.079	1,09	.043	0,19	.0075	5,08	.200						●	●					
NGD2M250RK	2	2,50	.098	1,09	.043	0,19	.0075	5,08	.200						●	●					
NGD3062RK	3	1,58	.062	1,02	.040	0,19	.0075	3,18	.125	●			●	●	●	●					
NGD3M200RK	3	2,00	.079	1,02	.040	0,19	.0075	4,06	.160				●		●	●					
NGD3094RK	3	2,39	.094	1,02	.040	0,19	.0075	6,35	.250	●			●	●	●	●					
NGD3M250RK	3	2,50	.098	1,02	.040	0,19	.0075	6,35	.250						●	●					
NGD3M300RK	3	3,00	.118	1,02	.040	0,19	.0075	6,35	.250						●	●					
NGD3125RK	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250	●			●	●	●	●					
NGD3M350RK	3	3,50	.138	2,92	.115	0,32	.0125	6,35	.250						●	●					
NGD3M400RK	3	4,00	.157	2,92	.115	0,32	.0125	6,35	.250						●	●					
NGD3189RK	3	4,80	.189	2,92	.115	0,57	.0225	6,35	.250				●	●	●	●					
NGD4125RK	4	3,18	.125	1,02	.040	0,19	.0075	6,35	.250				●	●	●	●					
NGD4M400RK	4	4,00	.157	2,92	.115	0,57	.0225	9,53	.375						●	●					
NGD4M450RK	4	4,50	.177	2,92	.115	0,57	.0225	12,70	.500						●	●					
NGD4189RK	4	4,80	.189	2,92	.115	0,57	.0225	9,53	.375	●			●	●	●	●					
NGD4M500RK	4	5,00	.197	2,92	.115	0,57	.0225	12,70	.500						●	●					
NGD4M550RK	4	5,50	.217	3,81	.150	0,57	.0225	12,70	.500						●	●					
NGD4250RK	4	6,35	.250	3,81	.150	0,57	.0225	12,70	.500	●			●	●	●	●					
left hand																					
NGD2M150LK	2	1,50	.059	1,09	.043	0,19	.0075	4,06	.160						●	●					
NGD2M200LK	2	2,00	.079	1,09	.043	0,19	.0075	5,08	.200						●	●					
NGD2M250LK	2	2,50	.098	1,09	.043	0,19	.0075	5,08	.200						●	●					
NGD3062LK	3	1,58	.062	1,02	.040	0,19	.0075	3,18	.125				●	●	●	●					
NGD3M200LK	3	2,00	.079	1,02	.040	0,19	.0075	4,06	.160						●	●					
NGD3094LK	3	2,39	.094	1,02	.040	0,19	.0075	6,35	.250	●			●	●	●	●					
NGD3M250LK	3	2,50	.098	1,02	.040	0,19	.0075	6,35	.250						●	●					
NGD3M300LK	3	3,00	.118	1,02	.040	0,19	.0075	6,35	.250						●	●					
NGD3125LK	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250	●			●	●	●	●					
NGD3M350LK	3	3,50	.138	2,92	.115	0,32	.0125	6,35	.250						●	●					
NGD3M400LK	3	4,00	.157	2,92	.115	0,32	.0125	6,35	.250						●	●					
NGD3189LK	3	4,80	.189	2,92	.115	0,57	.0225	6,35	.250				●	●	●	●					
NGD4125LK	4	3,18	.125	1,02	.040	0,19	.0075	6,35	.250				●	●	●	●					
NGD4M400LK	4	4,00	.157	2,92	.115	0,57	.0225	9,53	.375						●	●					
NGD4M450LK	4	4,50	.177	2,92	.115	0,57	.0225	12,70	.500						●	●					
NGD4189LK	4	4,80	.189	2,92	.115	0,57	.0225	9,53	.375				●	●	●	●					
NGD4M500LK	4	5,00	.197	2,92	.115	0,57	.0225	12,70	.500						●	●					
NGD4M550LK	4	5,50	.217	3,81	.150	0,57	.0225	12,70	.500						●	●					
NGD4250LK	4	6,35	.250	3,81	.150	0,57	.0225	12,70	.500				●	●	●	●					

NOTE: These inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

P			●		○	○	○	○		●											
M					●	●	●	●		○											
K			○	●						○											
N		○			○		○		●		●										
S		●			●	●	●	●				○									
H													●	●							

NGP • Grooving Positive Rake Inserts

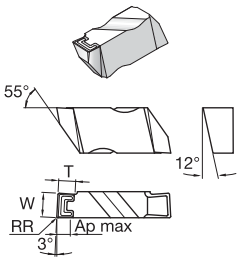
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGP2031R	2	0,79	.031	—	—	0,09	.0035	1,27	.050				●		●		●				
NGP2M150R	2	1,50	.059	—	—	0,19	.0075	2,79	.110	●											
NGP2062R	2	1,58	.062	—	—	0,19	.0075	2,79	.110				●		●		●				
NGP2125R	2	3,18	.125	—	—	0,19	.0075	2,79	.110				●		●		●				
NGP3088R	3	2,24	.088	—	—	0,19	.0075	2,39	.094				●		●		●		●		
NGP3125R	3	3,18	.125	—	—	0,19	.0075	3,81	.150				●		●		●		●		
NGP3156R	3	3,96	.156	—	—	0,19	.0075	3,81	.150				●		●						
NGP3189R	3	4,80	.189	—	—	0,57	.0225	3,81	.150						●						
NGP4189R	4	4,80	.189	—	—	0,57	.0225	6,35	.250				●		●		●				
NGP4250R	4	6,35	.250	—	—	0,57	.0225	6,35	.250				●		●						
left hand																					
NGP2031L	2	0,79	.031	—	—	0,09	.0035	1,27	.050				●		●		●				
NGP2M150L	2	1,50	.059	—	—	0,19	.0075	2,79	.110	●											
NGP2062L	2	1,58	.062	—	—	0,19	.0075	2,79	.110				●		●		●				
NGP2M200L	2	2,00	.079	—	—	0,19	.0075	2,79	.110	●											
NGP2125L	2	3,18	.125	—	—	0,19	.0075	2,79	.110				●		●		●				
NGP3088L	3	2,24	.088	—	—	0,19	.0075	2,39	.094				●		●				●		
NGP3125L	3	3,18	.125	—	—	0,19	.0075	3,81	.150				●		●		●		●		
NGP3156L	3	3,96	.156	—	—	0,19	.0075	3,81	.150						●						
NGP3189L	3	4,80	.189	—	—	0,57	.0225	3,81	.150						●						
NGP4189L	4	4,80	.189	—	—	0,57	.0225	6,35	.250				●		●						
NGP4250L	4	6,35	.250	—	—	0,57	.0225	6,35	.250				●		●						

NOTE: All KD and KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.

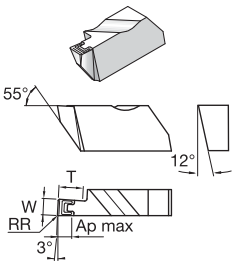
NF • Face Grooving Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in
right hand									
NF3125R	3	3,18	.125	—	—	0,19	.0075	3,81	.150
NF3188R	3	4,78	.188	—	—	0,57	.0225	3,81	.150
left hand									
NF3125L	3	3,18	.125	—	—	0,19	.0075	3,81	.150
NF3188L	3	4,78	.188	—	—	0,57	.0225	3,81	.150

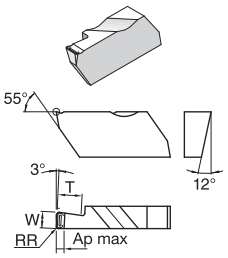
NOTE: Right-hand insert shown; left-hand insert is mirror image.



NF-K



NFD-K



NFD-KI

● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

NF-K • Face Grooving Postive Rake Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NF3M200RK	3	2,00	.079	1,02	.040	0,19	.0075	1,78	.070							●					
NF3M300RK	3	3,00	.118	1,02	.040	0,19	.0075	3,81	.150							●					
NF3125RK	3	3,18	.125	1,02	.040	0,19	.0075	3,81	.150					●		●					
NF3156RK	3	3,96	.156	2,92	.115	0,19	.0075	3,81	.150					●		●					
left hand																					
NF3M200LK	3	2,00	.079	1,02	.040	0,19	.0075	1,78	.070							●					
NF3M300LK	3	3,00	.118	1,02	.040	0,19	.0075	3,81	.150							●					
NF3125LK	3	3,18	.125	1,02	.040	0,19	.0075	3,81	.150					●		●					
NF3156LK	3	3,96	.156	2,92	.115	0,19	.0075	3,81	.150					●		●					

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

NFD-K • Face Grooving Deep-Grooving Inserts

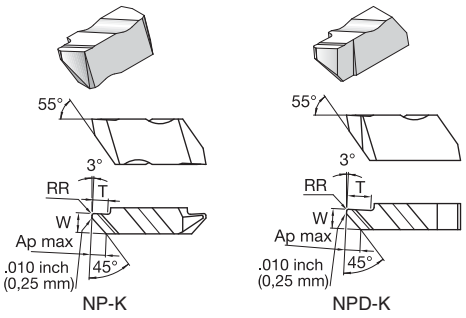
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NFD3M300RK	3	3,00	.118	1,02	.040	0,19	.0075	6,35	.250							●					
NFD3125RK	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250					●		●					
NFD4189RK	4	4,80	.189	2,92	.115	0,57	.0225	9,53	.375					●		●					
NFD4250RK	4	6,35	.250	3,81	.150	0,57	.0225	12,70	.500					●		●					
left hand																					
NFD3M300LK	3	3,00	.118	1,02	.040	0,19	.0075	6,35	.250							●					
NFD3125LK	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250					●		●					
NFD4189LK	4	4,80	.189	2,92	.115	0,57	.0225	9,53	.375					●		●					
NFD4250LK	4	6,35	.250	3,81	.150	0,57	.0225	12,70	.500					●		●					

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.

NFD-KI • Face Grooving Deep-Grooving Inserts

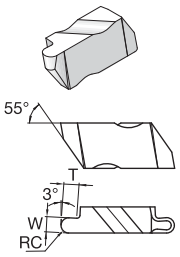
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NFD3125RKI	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250					●		●					
NFD3156RKI	3	3,96	.156	2,92	.115	0,19	.0075	6,35	.250							●					
NFD3189RKI	3	4,80	.189	2,92	.115	0,57	.0225	6,35	.250					●		●					
left hand																					
NFD3125LKI	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.250					●		●					
NFD3189LKI	3	4,80	.189	2,92	.115	0,57	.0225	6,35	.250					●		●					

NOTE: Inserts have one cutting edge.
NFD-KI inserts are compatible with NS-style boring bars only.
Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

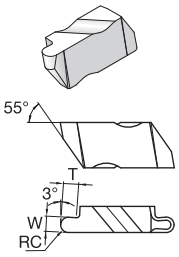
| | | |



● first choice
○ alternate choice

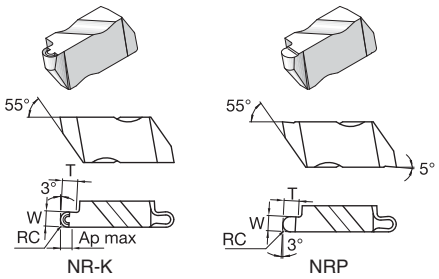
| | | |

(NR • Full Radius Inserts continued)



● first choice
○ alternate choice

| | | |



● first choice
○ alternate choice

P			●		○	○	○	○		●												
M					●	●	●	●		○												
K			○	●						○												
N		○			○		○		●		●											
S		●			●	●	●	●				○										
H												●	●									

NR-K • Full Radius Inserts with Chip Control

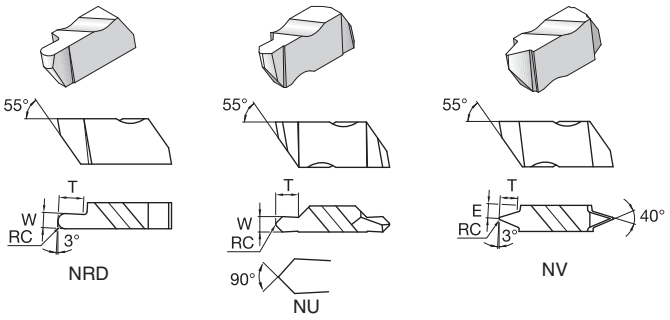
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NR3031RK	3	1,58	.062	1,98	.078	0,79	.0310	2,39	.094				●	●	●	●					
NR3047RK	3	2,39	.094	1,91	.075	1,19	.0470	3,81	.150				●	●	●	●					
NR3062RK	3	3,18	.125	2,92	.115	1,59	.0625	3,81	.150				●	●	●	●					
NR3078RK	3	3,96	.156	2,54	.100	1,98	.0780	3,81	.150				●	●	●	●					
NR4062RK	4	3,18	.125	2,92	.115	1,59	.0625	3,81	.150		●		●	●	●	●					
NR4094RK	4	4,78	.188	3,81	.150	2,39	.0940	6,35	.250		●		●	●	●	●					
NR4125RK	4	6,35	.250	3,81	.150	3,18	.1250	6,35	.250				●	●	●	●					
left hand																					
NR3031LK	3	1,58	.062	1,98	.078	0,79	.0310	2,39	.094				●	●	●	●					
NR3047LK	3	2,39	.094	1,91	.075	1,19	.0470	3,81	.150				●	●	●	●					
NR3062LK	3	3,18	.125	2,92	.115	1,59	.0625	3,81	.150				●	●	●	●					
NR3078LK	3	3,96	.156	2,54	.100	1,98	.0780	3,81	.150				●	●	●	●					
NR4062LK	4	3,18	.125	2,92	.115	1,59	.0625	3,81	.150		●		●	●	●	●					
NR4094LK	4	4,78	.188	3,81	.150	2,39	.0940	6,35	.250				●	●	●	●					
NR4125LK	4	6,35	.250	3,81	.150	3,18	.1250	6,35	.250				●	●	●	●					

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

NRP • Full Radius Positive Rake Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NRP3031R	3	1,58	.062	—	—	0,79	.0310	2,39	.094				●		●		●				
NRP3047R	3	2,39	.094	—	—	1,19	.0470	3,81	.150	●			●		●						
NRP3062R	3	3,18	.125	—	—	1,59	.0625	3,81	.150				●		●						
NRP3094R	3	4,78	.188	—	—	2,39	.0940	3,81	.150				●		●						
left hand																					
NRP3031L	3	1,58	.062	—	—	0,79	.0310	2,39	.094				●		●						
NRP3047L	3	2,39	.094	—	—	1,19	.0470	3,81	.150				●		●						
NRP3062L	3	3,18	.125	—	—	1,59	.0625	3,81	.150				●		●						
NRP3094L	3	4,78	.188	—	—	2,39	.0940	3,81	.150				●		●						

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



● first choice
○ alternate choice

P			●		○	○	○	○		●													
M					●	●	●	●		○													
K		○	●							○													
N	○			○		○		●		●													
S	●			●	●	●	●					○											
H													●	●									

NRD • Full Radius Deep-Grooving Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NRD3031R	3	1,58	.062	–	–	0,79	.0310	3,18	.125				●	●	●	●					
NRD3062R	3	3,18	.125	–	–	1,59	.0625	6,35	.250				●	●	●	●					
NRD4062R	4	3,18	.125	–	–	1,59	.0625	6,35	.250				●	●	●	●					
NRD4094R	4	4,78	.188	–	–	2,39	.0940	12,70	.500				●		●						
NRD4125R	4	6,35	.250	–	–	3,18	.1250	12,70	.500				●	●	●	●					
left hand																					
NRD3031L	3	1,58	.062	–	–	0,79	.0310	3,18	.125				●	●	●	●					
NRD3062L	3	3,18	.125	–	–	1,59	.0625	6,35	.250				●	●	●	●					
NRD4062L	4	3,18	.125	–	–	1,59	.0625	6,35	.250				●	●	●	●					
NRD4094L	4	4,78	.188	–	–	2,39	.0940	12,70	.500				●	●	●	●					
NRD4125L	4	6,35	.250	–	–	3,18	.1250	12,70	.500				●	●	●	●					

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.

NU

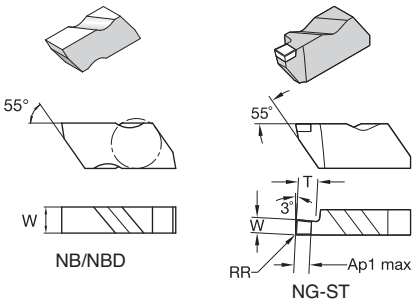
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NU3094R	3	2,39	.094	–	–	0,51	.0200	3,18	.125					●		●					
NU3125R	3	3,18	.125	–	–	1,19	.0470	4,78	.188					●		●					
NU3156R	3	3,96	.156	–	–	1,19	.0470	4,78	.188							●					
left hand																					
NU3094L	3	2,39	.094	–	–	0,51	.0200	3,18	.125					●		●					
NU3125L	3	3,18	.125	–	–	1,19	.0470	4,78	.188					●		●					
NU3156L	3	3,96	.156	–	–	1,19	.0470	4,78	.188							●					

NOTE: Tolerance on W ± 0,13mm (± .005").
Right-hand insert shown; left-hand insert is mirror image.
NU inserts compatible with NR-style inserts.

NV • Poly-Vee Grooving Inserts

catalog number	insert size	E mm	E in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																			
NV3RJ	3	3,18	.125	0,32	.0125	2,21	.087					●		●					
NV4RL	4	3,00	.118	0,32	.0125	5,11	.201					●		●					
left hand																			
NV3LJ	3	3,18	.125	0,32	.0125	2,21	.087							●					
NV4LL	4	3,00	.118	0,32	.0125	5,11	.201					●		●					

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



● first choice
○ alternate choice

		K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●				
M				●	●	●	●		○				
K			○	●					○				
N		○		○		○		●		●			
S		●		●	●	●	●				○		
H												●	●

NB • Blanks

catalog number	insert size	W mm	W in
right hand			
NB2R	2	3,81	.150
NB3R	3	4,95	.195
NB4R	4	6,48	.255
left hand			
NB2L	2	3,81	.150
NB3L	3	4,95	.195
NB4L	4	6,48	.255

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

NBD • Deep-Grooving Blanks

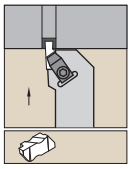
catalog number	insert size	W mm	W in
right hand			
NBD2R	2	3,81	.150
NBD3R	3	4,95	.195
left hand			
NBD3L	3	4,95	.195

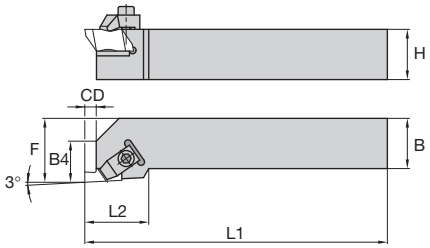
NOTE: NB and NBD blanks are designed to allow modification of the W-dimension and end form.
W-dimension is provided to indicate maximum possible width. Available only in uncoated grades.
Right-hand insert shown; left-hand insert is mirror image.

NG-ST • Tipped Inserts

catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in
right hand									
NG3M200RS02020ST	3	2,00	.079	2,00	.0790	0,20	.0080	2,39	.094
NG3M300RS02020ST	3	3,00	.118	3,00	.1181	0,20	.0080	3,81	.150
NG3125RS0820ST	3	3,18	.125	3,00	.1181	0,25	.0100	3,81	.150
NG3M400RS02020ST	3	4,00	.157	3,00	.1181	0,20	.0080	3,81	.150
NG3189RS0820ST	3	4,81	.189	3,00	.1181	0,25	.0100	3,81	.150
left hand									
NG3M200LS02020ST	3	2,00	.079	2,00	.0790	0,20	.0080	2,39	.094
NG3M300LS02020ST	3	3,00	.118	3,00	.1181	0,20	.0080	3,81	.150
NG3125LS0820ST	3	3,18	.125	3,00	.1181	0,25	.0100	3,81	.150
NG3M400LS02020ST	3	4,00	.157	3,00	.1181	0,20	.0080	3,81	.150
NG3189LS0820ST	3	4,81	.189	3,00	.1181	0,25	.0100	3,81	.150

NOTE: All KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.





NS

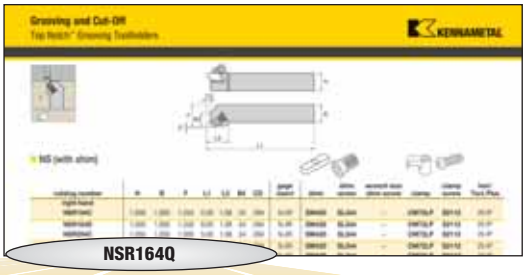




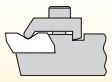
catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex/ Torx Plus
right hand											
NSR062	.375	.375	.562	2.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR082V	.500	.500	.750	3.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR102B	.625	.625	.875	4.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR122B	.750	.750	1.000	4.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR162C	1.000	1.000	1.250	5.00	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR123A	.750	.750	1.000	4.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR123B	.750	.750	1.000	4.50	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR163C	1.000	1.000	1.250	5.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR163D	1.000	1.000	1.250	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR203D	1.250	1.250	1.500	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR243D	1.500	1.500	2.000	6.00	1.38	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR243E	1.500	1.500	2.000	7.00	1.38	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR853D	1.250	1.000	1.250	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR205D	1.250	1.250	1.500	6.00	2.00	.61	.415	N.5R	**CM80**	**S352**	1/4
NSR245D	1.500	1.500	2.000	6.00	2.00	.61	.415	N.5R	**CM80**	**S352**	1/4
left hand											
NSL062	.375	.375	.562	2.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL082V	.500	.500	.750	3.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL102B	.625	.625	.875	4.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL122B	.750	.750	1.000	4.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL162C	1.000	1.000	1.250	5.00	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL123A	.750	.750	1.000	4.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL123B	.750	.750	1.000	4.50	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL163C	1.000	1.000	1.250	5.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL163D	1.000	1.000	1.250	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL203D	1.250	1.250	1.500	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL243D	1.500	1.500	2.000	6.00	1.38	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL243E	1.500	1.500	2.000	7.00	1.38	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL853D	1.250	1.000	1.250	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL205D	1.250	1.250	1.500	6.00	2.00	.61	.415	N.5L	**CM81**	**S352**	1/4

How Do Catalog Numbers Work?

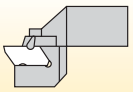
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



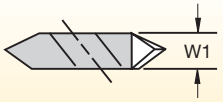
N	S	R		16	4	D
Insert Holding Method	Insert Mounting Location	Hand of Tool	Drop Head	Shank Size	Insert Size	Qualified Surface and Length



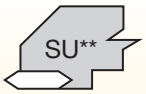
N = Top Notch*



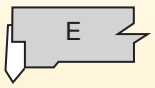
DH = Drop Head



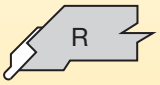
insert size	W1	
inch	inch	mm
2	.150	3,81
3	.195	4,95
4	.255	6,98
5	.380	9,65
6	.383	9,73
8	.438	11,13



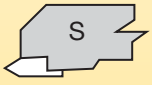
SU = Side mount utility**



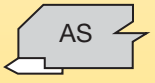
E = End



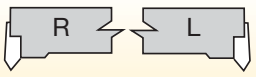
R = Undercut



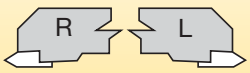
S = Side mount, offset



AS = side mount, no offset



End mount



Side mount

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.

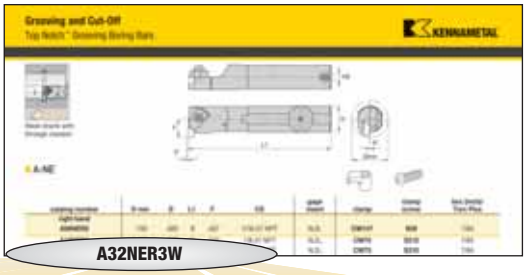
metric:
Shank height and width in mm and holder length according to ISO standard.

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

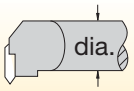
* Kennametal proprietary standard only.
**Side mount utility holder can only use NTU inserts.

How Do Catalog Numbers Work?

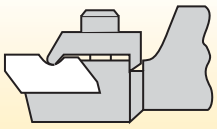
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



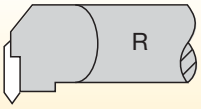
A	32	N	E	R	3	
Bar Type	Bar Diameter	Insert Holding Method	Insert Location	Hand of Bar	Insert Size	Additional Information



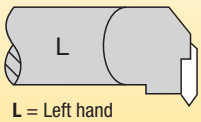
bar diameter in millimeters



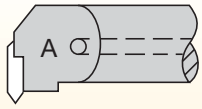
N* = Top Notch



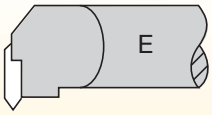
R = Right hand



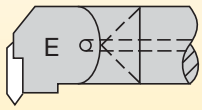
L = Left hand



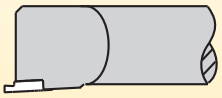
A = Steel with coolant



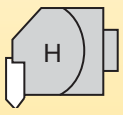
E = End mount



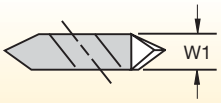
E = Carbide with coolant



S = Straight mount

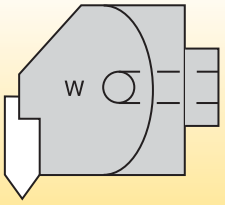


H = Interchangeable head

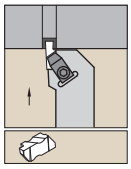


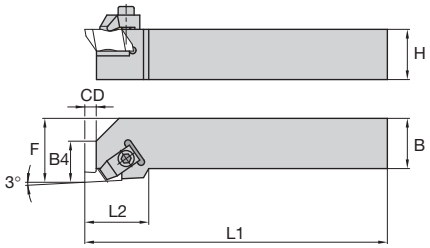
inch number	T mm	T in
1	3,54	.100
2	3,81	.150
3	5,35	.195
4	6,40	.255
5	9,65	.380
6	9,73	.383
8	11,13	.438

through-coolant interchangeable head

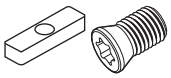


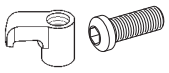
*Kennematal standard only.



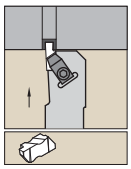


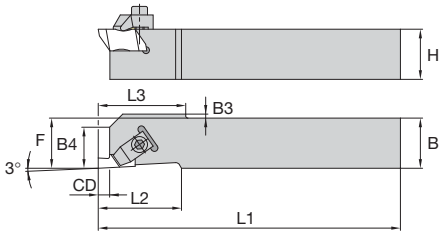
NS (with shim)





catalog number	H	B	F	L1	L2	B4	CD	gage insert	shim	shim screw	wrench size shim screw	clamp	clamp screw	hex/ Torx Plus
right hand														
NSR164C	1.000	1.000	1.250	5.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR164D	1.000	1.000	1.250	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR204C	1.250	1.250	1.500	5.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR204D	1.250	1.250	1.500	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR244D	1.500	1.500	2.000	6.00	1.50	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR244E	1.500	1.500	2.000	7.00	1.50	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR854D	1.250	1.000	1.250	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR864E	1.500	1.000	1.250	7.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR166D	1.000	1.000	1.250	6.00	1.38	.67	.334	N.6R	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32
NSR206D	1.250	1.250	1.500	6.00	1.38	.67	.334	N.6R	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32
NSR246D	1.500	1.500	2.000	6.00	1.50	.67	.334	N.6R	**SM416**	**S111**	1/16	**CM120**	**S412**	5/32
NSR168D	1.000	1.000	1.250	6.00	1.25	.72	.225	N.8R	**SM419**	**S112**	1/16	**CM144**	**S422**	3/16
left hand														
NSL164C	1.000	1.000	1.250	5.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL164D	1.000	1.000	1.250	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL204C	1.250	1.250	1.500	5.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL204D	1.250	1.250	1.500	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL244D	1.500	1.500	2.000	6.00	1.50	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL244E	1.500	1.500	2.000	7.00	1.50	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL854D	1.250	1.000	1.250	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL864E	1.500	1.000	1.250	7.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	—	**CM73LP**	**S2112**	25 IP
NSL166D	1.000	1.000	1.250	6.00	1.38	.67	.334	N.6L	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32
NSL206D	1.250	1.250	1.500	6.00	1.38	.67	.334	N.6L	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32
NSL246D	1.500	1.500	2.000	6.00	1.50	.67	.334	N.6L	**SM416**	**S111**	1/16	**CM121**	**S412**	5/32

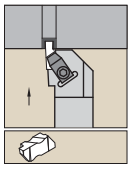


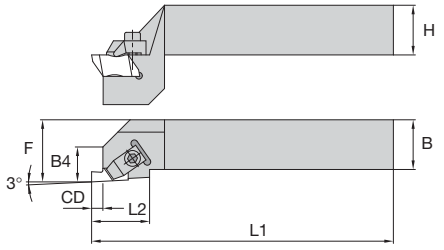


NAS




catalog number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex/ Torx Plus
right hand													
NASR062D	.375	.375	.375	6.00	.75	.35	.138	.070	.88	N.2R	**CM182**	**S310**	7/64
NASR082D	.500	.500	.500	6.00	.75	.35	.138	—	—	N.2R	**CM182**	**S310**	7/64
NASR102B	.625	.625	.625	4.50	.75	.35	.138	—	—	N.2R	**CM74**	**S310**	7/64
NASR083D	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	N.3R	**CM184LP**	**S2112**	25 IP
NASR103B	.625	.625	.625	4.50	1.30	—	.210	—	—	N.3R	**CM184LP**	**S2112**	25 IP
left hand													
NASL062D	.375	.375	.375	6.00	.75	.35	.138	.070	.88	N.2L	**CM183**	**S310**	7/64
NASL082D	.500	.500	.500	6.00	.75	.35	.138	—	—	N.2L	**CM183**	**S310**	7/64
NASL102B	.625	.625	.625	4.50	.75	.35	.138	—	—	N.2L	**CM75**	**S310**	7/64
NASL083D	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	N.3L	**CM185LP**	**S2112**	25 IP
NASL103B	.625	.625	.625	4.50	1.30	—	.210	—	—	N.3L	**CM185LP**	**S2112**	25 IP

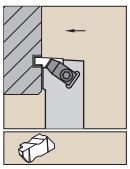


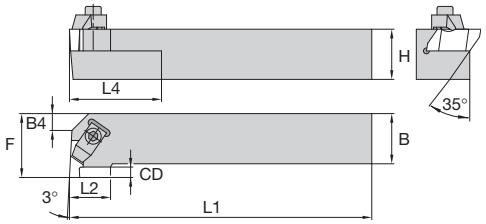


NS-DH




catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex/ Torx Plus	wrench size jack screw
right hand												
NSRDH122B	.750	.750	1.000	4.50	.75	.40	.138	N.2R	**CM74**	**S310**	7/64	1/8
NSRDH162C	1.000	1.000	1.250	5.00	.75	.40	.138	N.2R	**CM74**	**S310**	7/64	1/8
NSRDH123A	.750	.750	1.250	4.00	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—
NSRDH163C	1.000	1.000	1.250	5.00	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—
NSRDH163D	1.000	1.000	1.250	6.00	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—
NSRDH203D	1.250	1.250	1.500	6.00	1.25	.62	.210	N.3R	**CM72LP**	**S2112**	25 IP	3/16
NSRDH204D	1.250	1.250	1.500	6.00	1.38	.62	.294	N.4R	**CM72LP**	**S2112**	25 IP	3/16
left hand												
NSLDH203D	1.250	1.250	1.500	6.00	1.25	.62	.210	N.3L	**CM73LP**	**S2112**	25 IP	3/16



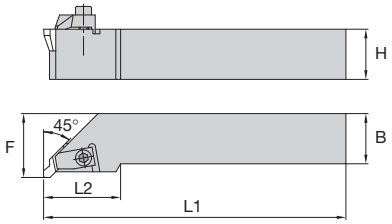


NE



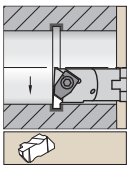

catalog number	H	B	F	L1	L2	B4	CD	L4	gage insert	clamp	clamp screw	hex/ Torx Plus
right hand												
NER062	.375	.375	.750	2.50	.50	—	.138	1.0	N.2L	**CM75**	**S310**	7/64
NER082V	.500	.500	.750	3.50	.50	—	.138	1.0	N.2L	**CM75**	**S310**	7/64
NER102B	.625	.625	.750	4.50	—	—	.138	1.0	N.2L	**CM75**	**S310**	7/64
NER122B	.750	.750	1.000	4.50	.50	.29	.138	1.0	N.2L	**CM75**	**S310**	7/64
NER162C	1.000	1.000	1.250	5.00	.50	.41	.138	1.0	N.2L	**CM75**	**S310**	7/64
NER123B	.750	.750	1.125	4.50	.75	—	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER163C	1.000	1.000	1.250	5.00	.75	—	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER163D	1.000	1.000	1.250	6.00	.75	—	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER203D	1.250	1.250	1.500	6.00	.75	.26	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER243D	1.500	1.500	2.000	6.00	.75	.76	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER853D	1.250	1.000	1.250	6.00	.75	—	.210	2.0	N.3L	**CM73LP**	**S2112**	25 IP
NER164C	1.000	1.000	1.375	5.00	.75	—	.294	2.0	N.4L	**CM73LP**	**S2112**	25 IP
NER164D	1.000	1.000	1.375	6.00	.75	—	.294	2.0	N.4L	**CM73LP**	**S2112**	25 IP
NER204D	1.250	1.250	1.625	6.00	.75	.27	.294	2.0	N.4L	**CM73LP**	**S2112**	25 IP
NER244D	1.500	1.500	2.000	6.00	.75	.65	.294	2.0	N.4L	**CM73LP**	**S2112**	25 IP
NER205D	1.250	1.250	2.000	6.00	1.44	—	.415	2.0	N.5L	**CM81**	**S352**	1/4
NER206D	1.250	1.250	1.625	6.00	.75	.27	.300	2.0	N.6L	**CM121**	**S412**	5/32
left hand												
NEL062	.375	.375	.750	2.50	.50	—	.138	1.0	N.2R	**CM74**	**S310**	7/64
NEL082V	.500	.500	.750	3.50	.50	—	.138	1.0	N.2R	**CM74**	**S310**	7/64
NEL102B	.625	.625	.750	4.50	—	—	.138	1.0	N.2R	**CM74**	**S310**	7/64
NEL122B	.750	.750	1.000	4.50	.50	.29	.138	1.0	N.2R	**CM74**	**S310**	7/64
NEL162C	1.000	1.000	1.250	5.00	.50	.41	.138	1.0	N.2R	**CM74**	**S310**	7/64
NEL123B	.750	.750	1.125	4.50	.75	—	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL163C	1.000	1.000	1.250	5.00	.75	—	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL163D	1.000	1.000	1.250	6.00	.75	—	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL203D	1.250	1.250	1.500	6.00	.75	.26	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL243D	1.500	1.500	2.000	6.00	.75	.76	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL853D	1.250	1.000	1.250	6.00	.75	—	.210	2.0	N.3R	**CM72LP**	**S2112**	25 IP
NEL164C	1.000	1.000	1.375	5.00	.75	—	.294	2.0	N.4R	**CM72LP**	**S2112**	25 IP
NEL164D	1.000	1.000	1.375	6.00	.75	—	.294	2.0	N.4R	**CM72LP**	**S2112**	25 IP
NEL204D	1.250	1.250	1.625	6.00	.75	.27	.294	2.0	N.4R	**CM72LP**	**S2112**	25 IP
NEL244D	1.500	1.500	2.000	6.00	.75	.65	.294	2.0	N.4R	**CM72LP**	**S2112**	25 IP
NEL205D	1.250	1.250	2.000	6.00	1.44	—	.415	2.0	N.5R	**CM80**	**S352**	1/4
NEL206D	1.250	1.250	1.625	6.00	.75	.27	.300	2.0	N.6R	**CM120**	**S412**	5/32



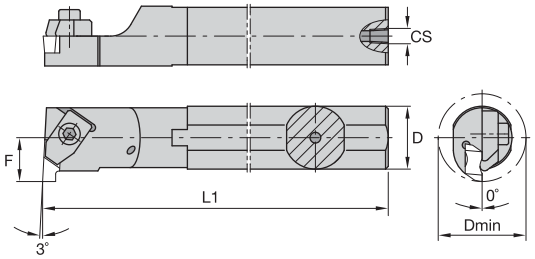


NR

catalog number	H	B	F	L1	L2	gage insert	clamp	clamp screw	hex/ Torx Plus
right hand									
NRR123B	.750	.750	1.000	4.50	1.25	NU3L	**CM73LP**	**S2112**	25 IP
NRR163C	1.000	1.000	1.250	5.00	1.25	NU3L	**CM73LP**	**S2112**	25 IP
NRR163D	1.000	1.000	1.250	6.00	1.25	NU3L	**CM73LP**	**S2112**	25 IP
NRR203D	1.250	1.250	1.500	6.00	1.25	NU3L	**CM73LP**	**S2112**	25 IP
NRR243D	1.500	1.500	2.000	6.00	1.38	NU3L	**CM73LP**	**S2112**	25 IP
left hand									
NRL123B	.750	.750	1.000	4.50	1.25	NU3R	**CM72LP**	**S2112**	25 IP
NRL163C	1.000	1.000	1.250	5.00	1.25	NU3R	**CM72LP**	**S2112**	25 IP
NRL163D	1.000	1.000	1.250	6.00	1.25	NU3R	**CM72LP**	**S2112**	25 IP
NRL203D	1.250	1.250	1.500	6.00	1.25	NU3R	**CM72LP**	**S2112**	25 IP



Steel shank with through coolant.

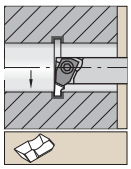


A-NE

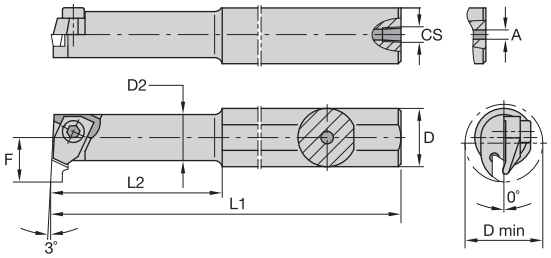



catalog number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
A08NER2	.730	.500	8	.437	1/16-27 NPT	N.2L	**CM147**	**S39**	7/64
A10NER2	1.000	.625	10	.500	1/8-27 NPT	N.2L	**CM75**	**S310**	7/64
A12NER2	1.125	.750	10	.562	1/8-27 NPT	N.2L	**CM75**	**S310**	7/64
A16NER2	1.375	1.000	12	.688	1/4-18 NPT	N.2L	**CM75**	**S310**	7/64
A16NER3	1.375	1.000	12	.688	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A20NER3	1.750	1.250	14	.875	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A24NER3	2.000	1.500	14	1.000	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A28NER3	2.250	1.750	14	1.125	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A32NER3	2.500	2.000	16	1.250	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A40NER3	3.000	2.500	16	1.500	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A28NER4	2.500	1.750	14	1.250	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A32NER4	2.750	2.000	16	1.375	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A40NER4	3.250	2.500	16	1.625	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A32NER5	2.812	2.000	16	1.406	1/4-18 NPT	N.5L	**CM81**	**S352**	1/4
A32NER6	2.750	2.000	16	1.375	1/4-18 NPT	N.6L	**CM121**	**S2112**	5/32
A40NER6	3.250	2.500	16	1.625	1/4-18 NPT	N.6L	**CM121**	**S2112**	5/32
left hand									
A08NEL2	.730	.500	8	.437	1/16-27 NPT	N.2R	**CM146**	**S39**	7/64
A10NEL2	1.000	.625	10	.500	1/8-27 NPT	N.2R	**CM74**	**S310**	7/64
A12NEL2	1.125	.750	10	.562	1/8-27 NPT	N.2R	**CM74**	**S310**	7/64
A16NEL2	1.375	1.000	12	.688	1/4-18 NPT	N.2R	**CM74**	**S310**	7/64
A16NEL3	1.375	1.000	12	.688	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A20NEL3	1.750	1.250	14	.875	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A24NEL3	2.000	1.500	14	1.000	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A28NEL3	2.250	1.750	14	1.125	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A32NEL3	2.500	2.000	16	1.250	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A40NEL3	3.000	2.500	16	1.500	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A28NEL4	2.500	1.750	14	1.250	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A32NEL4	2.750	2.000	16	1.375	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A40NEL4	3.250	2.500	16	1.625	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A32NEL5	2.812	2.000	16	1.406	1/4-18 NPT	N.5R	**CM80**	**S352**	1/4
A32NEL6	2.750	2.000	16	1.375	1/4-18 NPT	N.6R	**CM120**	**S2112**	5/32

NOTE: Minimum bore capability varies with depth of groove. See page D160 for details.



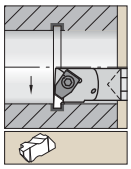
Necked steel shank
with through coolant.



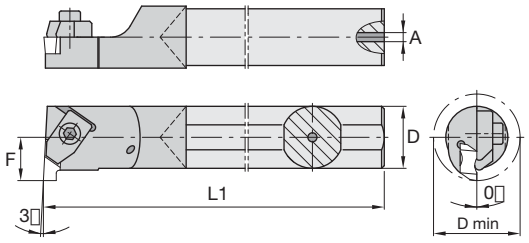
A-NE -1

catalog number	D min	D	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand											
A06NER1	.440	.375	6.000	1	.26	.125	—	N.1L	**CM109**	**S304**	5/64
A08NER1	.440	.500	8.000	1	.26	—	1/16-27 NPT	N.1L	**CM109**	**S304**	5/64
A10NER1	.800	.625	10.000	—	.41	—	1/8-27 NPT	N.1L	**CM109**	**S304**	5/64

NOTE: Minimum bore capability varies with depth of groove. See page D156 for details.



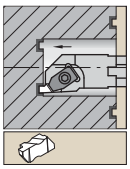
Carbide shank
with through coolant.



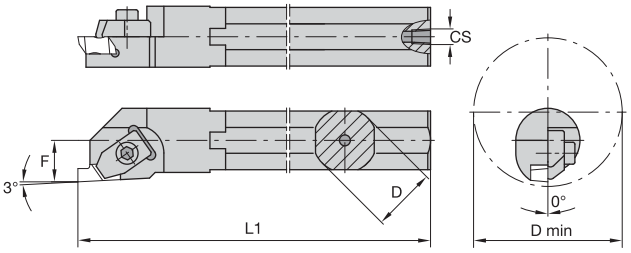
E-NE

catalog number	D min	D	L1	F	A	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
E08NER2	.730	.500	8.0000	.437	.19	N.2L	**CM147**	**S39**	7/64
E10NER2	1.000	.625	10.0000	.500	.22	N.2L	**CM75**	**S310**	7/64
E12NER2	1.125	.750	10.0000	.562	.28	N.2L	**CM75**	**S310**	7/64
E16NER3	1.375	1.000	12.0000	.688	.31	N.3L	**CM73**	**S412**	25 IP
left hand									
E08NEL2	.730	.500	8.0000	.437	.19	N.2R	**CM146**	**S39**	7/64
E10NEL2	1.000	.625	10.0000	.500	.22	N.2R	**CM74**	**S310**	7/64
E12NEL2	1.125	.750	10.0000	.562	.28	N.2R	**CM74**	**S310**	7/64
E16NEL3	1.375	1.000	12.0000	.688	.31	N.3R	**CM72**	**S412**	25 IP

NOTE: Minimum bore capability varies with depth of groove. See page D156 for details.



Steel shank with through coolant.

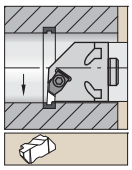


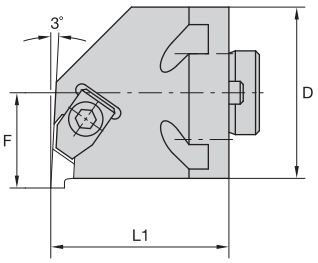
A-NS

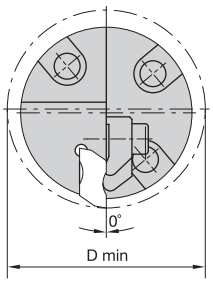



catalog number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
A16TNSR3	2.250	1.000	12	.640	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A20UNSR3	2.250	1.250	14	.765	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A24UNSR3	2.250	1.500	14	.890	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A28UNSR3	2.250	1.750	14	1.015	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A32VNSR3	2.375	2.000	16	1.281	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A40VNSR3	2.875	2.500	16	1.531	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
left hand									
A16TNSL3	2.250	1.000	12	.640	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A20UNSL3	2.250	1.250	14	.765	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A24UNSL3	2.250	1.500	14	.890	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A32VNSL3	2.375	2.000	16	1.281	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP

NOTE: Minimum bore applicable only when used with NFD-KI inserts on internal face grooves. See page D156 for maching guidelines when face grooving.







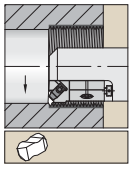
H-NE

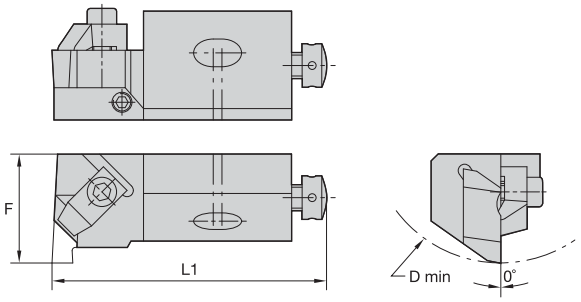




catalog number	D	D min	F	L1	gage insert	clamp	clamp screw	Torx Plus
right hand								
H20NER3W	1.250	1.750	.875	1.625	N.3L	**CM73LP**	**S2112**	25 IP
H24NER3W	1.500	2.000	1.000	1.625	N.3L	**CM73LP**	**S2112**	25 IP
H28NER3W	1.750	2.250	1.125	1.625	N.3L	**CM73LP**	**S2112**	25 IP
H32NER3W	2.000	2.500	1.250	1.625	N.3L	**CM73LP**	**S2112**	25 IP
H40NER3W	2.500	3.000	1.500	1.625	N.3L	**CM73LP**	**S2112**	25 IP
H28NER4W	1.750	2.500	1.250	1.625	N.4L	**CM73LP**	**S2112**	25 IP
H32NER4W	2.000	2.750	1.375	1.625	N.4L	**CM73LP**	**S2112**	25 IP
H36NER4W	2.250	3.000	1.500	1.625	N.4L	**CM73LP**	**S2112**	25 IP
H40NER4W	2.500	3.250	1.625	1.625	N.4L	**CM73LP**	**S2112**	25 IP
H28NER6W	1.750	2.500	1.250	1.625	N.6L	**CM121**	**S412**	5/32
H32NER6W	2.000	2.750	1.375	1.625	N.6L	**CM121**	**S412**	5/32
H40NER6W	2.500	3.250	1.625	1.625	N.6L	**CM121**	**S412**	5/32
H24NER8W	1.500	2.000	1.000	1.625	N.8L	**CM145**	**S422**	3/16
H32NER8W	2.000	2.500	1.250	1.625	N.8L	**CM145**	**S422**	3/16
left hand								
H20NEL3W	1.250	1.750	.875	1.625	N.3R	**CM72LP**	**S2112**	25 IP
H24NEL3W	1.500	2.000	1.000	1.625	N.3R	**CM72LP**	**S2112**	25 IP
H28NEL3W	1.750	2.250	1.125	1.625	N.3R	**CM72LP**	**S2112**	25 IP
H32NEL3W	2.000	2.500	1.250	1.625	N.3R	**CM72LP**	**S2112**	25 IP
H40NEL3W	2.500	3.000	1.500	1.625	N.3R	**CM72LP**	**S2112**	25 IP
H28NEL4W	1.750	2.500	1.250	1.625	N.4R	**CM72LP**	**S2112**	25 IP
H32NEL4W	2.000	2.750	1.375	1.625	N.4R	**CM72LP**	**S2112**	25 IP
H36NEL4W	2.250	3.000	1.500	1.625	N.4R	**CM72LP**	**S2112**	25 IP
H40NEL4W	2.500	3.250	1.625	1.625	N.4R	**CM72LP**	**S2112**	25 IP
H28NEL6W	1.750	2.500	1.250	1.625	N.6R	**CM120**	**S412**	5/32
H32NEL6W	2.000	2.750	1.375	1.625	N.6R	**CM120**	**S412**	5/32
H40NEL6W	2.500	3.250	1.625	1.625	N.6R	**CM120**	**S412**	5/32

NOTE: For boring adapters, see pages C119–C120.
Minimum bore capability varies with depth of groove. See page D156 for details.





NE

catalog number	D min	F	L1	gage insert	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	hold down screw	clamp screw	hex	washer
right hand														
NER12CA2	1.969	.787	2.19	N.2L	**CM75**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	—	**MS1025**	4 mm	**CSWM 060 050**
NER20CA2	2.756	.984	2.76	N.2L	**CM75**	**MS1025**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	—	**MS1025**	5 mm	**CSWM 080 050**
NER25CA3	3.937	1.260	3.94	N.3L	**CM73LP**	**MS364**	4 mm	**KUAM27**	4 mm	**KUAM33**	—	**MS364**	6 mm	**CSWM 100 080**
NER25CA4	3.937	1.260	3.94	N.4L	**CM73LP**	**MS364**	4 mm	**KUAM27**	4 mm	**KUAM33**	—	**MS364**	6 mm	**CSWM 100 080**
left hand														
NEL12CA2	1.969	.787	2.17	N.2R	**CM74**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	—	**MS1025**	4 mm	**CSWM 060 050**
NEL25CA3	3.937	1.260	3.94	N.3R	**CM72LP**	**MS364**	4 mm	**KUAM26**	4 mm	**KUAM33**	—	**MS364**	6 mm	**CSWM 100 080**

NOTE: Minimum bore capability varies with depth of groove. See page D156 for details.



Top Notch™ Thread Tooling

The proven high-productivity threading solution.

Top Notch Threading with Beyond™ Insert technology provides consistent tool performance and superior clamping thread to almost any operation. With the largest selection of grades and geometries in the industry, the Top Notch Threading system is a proven solution.

- Largest selection of insert geometries and grades in the industry.
- A very rigid insert clamping design ensures best tool life, surface finish, and workpiece quality.
- Eliminates long troublesome coils.
- Minimizes built-up edge.
- Precisely cuts most common materials.
- Reduces cutting forces.
- Ensures accurate high-quality threads.
- Excellent for internal threading operations.
- Available in partial profile inserts for 60° thread forms.

Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

KENNAMETAL®

Machining Guidelines for Chip Control • Grooving

- Center height of insert should be positioned at the center of the workpiece, or up to .005" (0,13mm) 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" (0,79–1,6mm) wide insert can cut up to .025" (0,6mm) deep.
  2) .067–.128" (1,7–3,3mm) wide insert can cut up to .040" (1mm) deep.
  3) .138–.189" (3,5–4,8mm) wide insert can cut up to .080" (2mm) deep.
  4) .197–.375" (5–9,5mm) wide insert can cut up to .120" (3mm) deep.

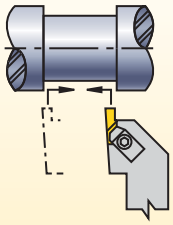
Groove Limits (Maximum Internal Groove Depth vs. Minimum Bore Diameter)

	maximum groove depth		minimum bore diameter	
insert	inch	mm	inch	mm
NG-1094L	.075	1,91	.800	20,32
	.040	1,02	.440	11,18
NG-2031R/L	.050	1,27	.730	18,54
NG-2041R/L				
NG-2047R/L				
NG-2058R/L				
	.110	2,79	2.500	63,50
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	.094	2,39	1.750	44,45
NG-3072R/L	.090	2,29	1.625	41,28
NG-3078R/L	.075	1,91	1.375	34,93
NG-3088R/L				
NG-3094R/L				
NG-3097R/L	.150	3,81	2.375	60,33
NG-3105R/L				
NG-3110R/L	.145	3,68	2.125	53,98
NG-3122R/L				
NG-3125R/L	.138	3,51	1.875	47,63
NG-3142R/L				
NG-3156R/L	.125	3,18	1.625	41,28
NG-3178R/L				
NG-3185R/L	.110	2,79	1.375	34,93
NG-3189R/L				
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

NOTE: 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.

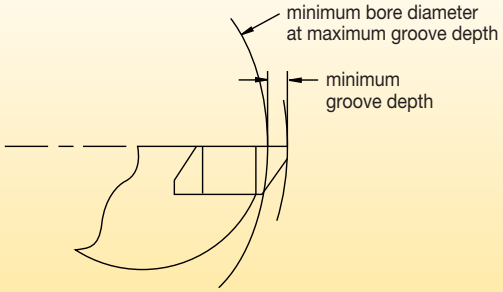
Finish Turning the Groove

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.



	maximum groove depth		minimum bore diameter	
insert	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 vs. Bar Interference



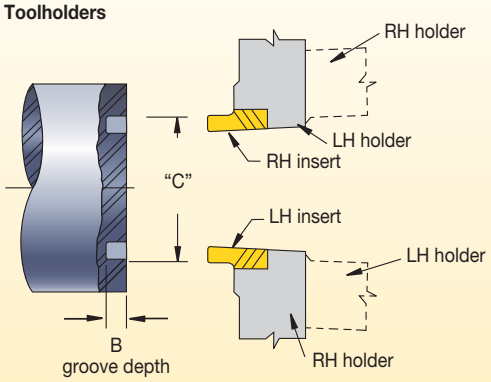
NOTE: Internal grooving depth limits are a function of bar clearance versus bore diameters.

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

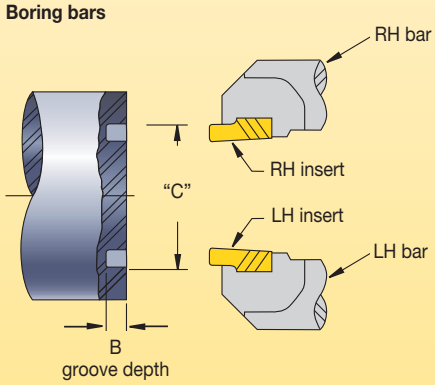
Toolholders



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	333,0

Boring bars

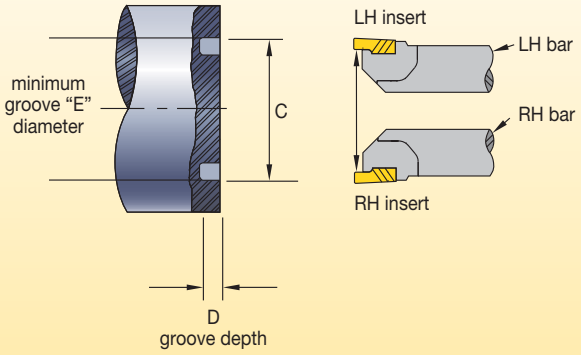


Machining Guidelines for Face Grooving Operations • Internal

insert family	maximum groove depth "D"		minimum groove diameter "E"	
	inch	mm	inch	mm
NFD-3-KI	.250	6,35	2.25	57,2

NOTE: For internal applications, use only NFD-KI inserts.

Boring bars





KGF and KGT Cut-Off Inserts

Primary Application

KGT and KGF inserts specifically designed to fit SELF-GRIP® toolholders available from Iscar®. For traditional cut-off applications, the original KGT-style inserts are available in widths ranging from 2,25–4,80mm. For increased stability in large diameter cut-off applications, the KGF geometry is available in widths ranging from 1,60–9,50mm.

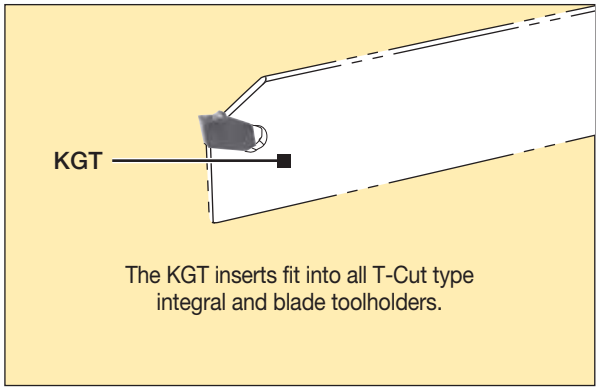
Features and Benefits

KGT Inserts

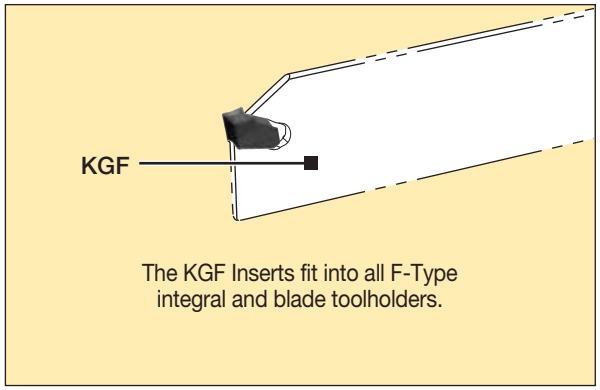
- KGT inserts are T-Type with no stopper. The KGT inserts replace single-end cutting inserts.

KGF Inserts

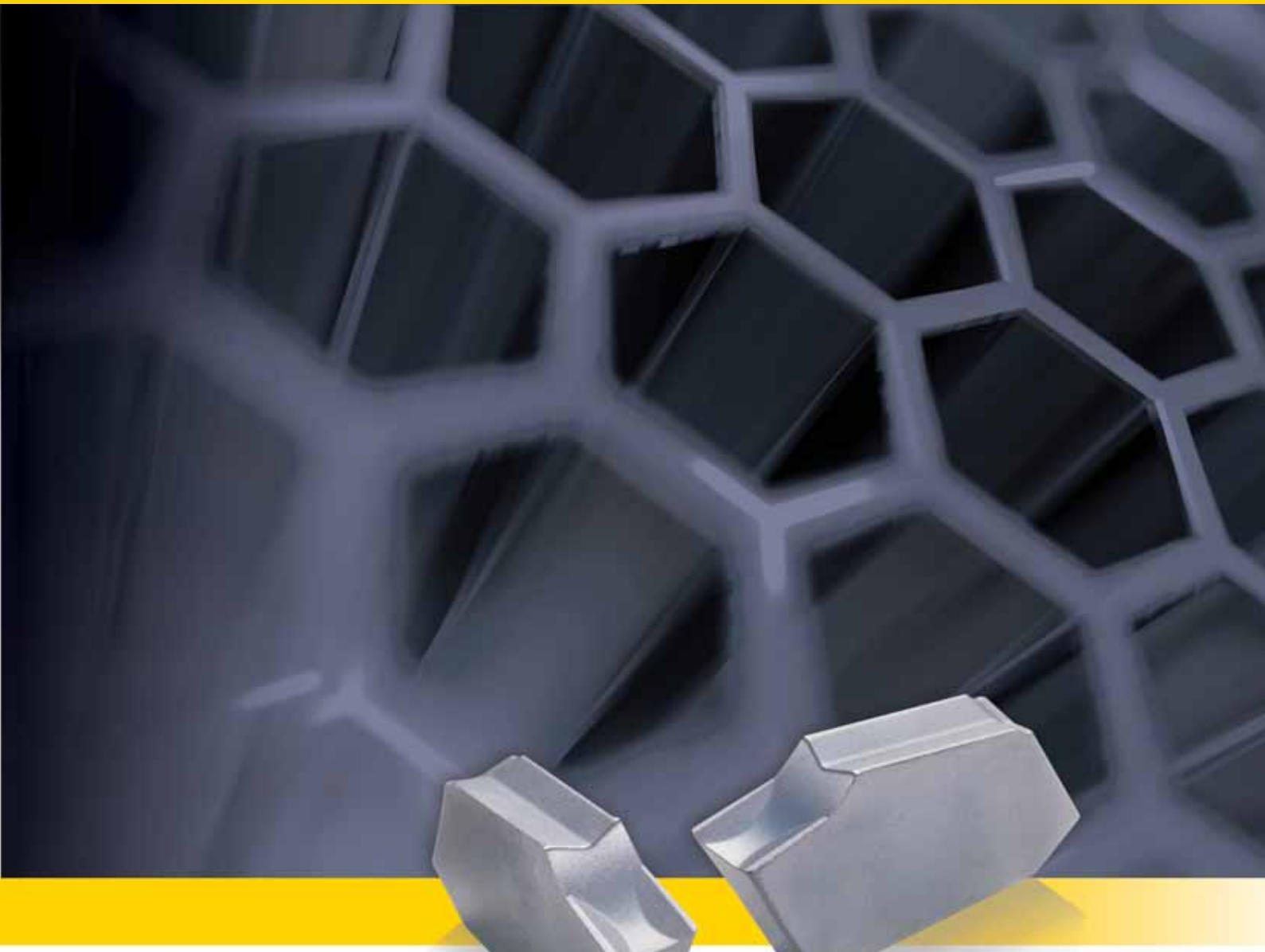
- Single-side insert for cut-off applications. This insert has a hard stop that seats insert securely into the pocket.

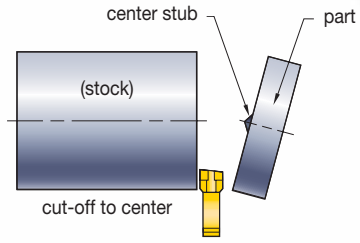


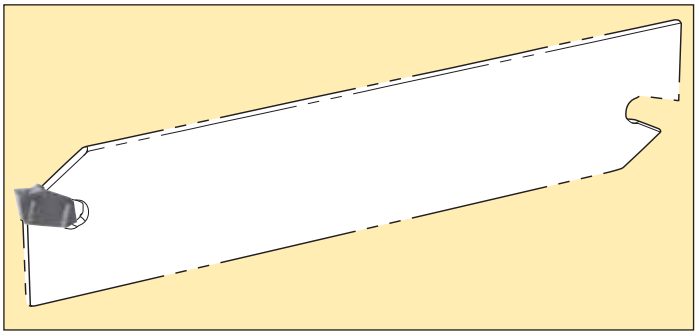
The KGT inserts fit into all T-Cut type integral and blade toolholders.

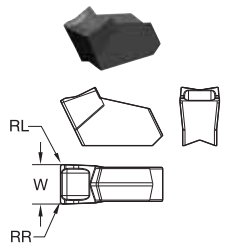


The KGF Inserts fit into all F-Type integral and blade toolholders.

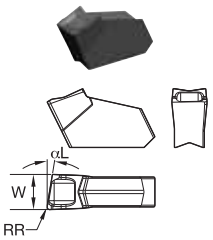



center stub
part
(stock)
cut-off to center

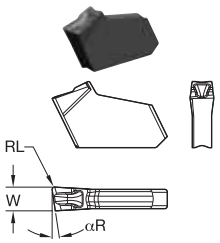




KGF



KGF-L



KGF-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGF

	W		RL		
catalog number	mm	in	mm	in	KC5025
KGFN16	1,60	.063	0,16	.006	●
KGFN2J	2,00	.079	0,16	.006	●
KGFN2	2,20	.087	0,16	.006	●
KGFN24	2,40	.095	0,16	.006	●
KGFN3	3,00	.118	0,25	.010	●
KGFN3J	3,00	.118	0,25	.010	●
KGFN3M	3,03	.119	0,20	.008	●
KGFN4J	4,00	.157	0,25	.010	●
KGFN4	4,10	.161	0,28	.011	●
KGFN4B	4,10	.161	0,40	.016	●
KGFN48	4,80	.189	0,28	.011	●
KGFN6	6,39	.251	0,35	.014	●
KGFN9	9,50	.374	0,47	.019	●

NOTE: RR = RL on neutral inserts.

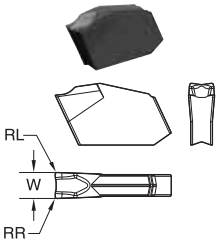
KGF-L

	W			RR		
catalog number	mm	in	αL	mm	in	
KGFL38D	3,00	.118	8	0,25	.010	●
KGFL48D	4,09	.161	8	0,28	.011	●

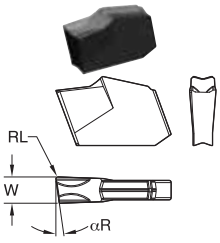
NOTE: RR = RL on neutral inserts.

KGF-R

	W			RL		
catalog number	mm	in	αR	mm	in	
KGFR168D	1,60	.063	8	0,16	.006	●
KGFR248D	2,39	.094	8	0,16	.006	●
KGFR315D	3,00	.118	15	0,25	.010	●
KGFR38D	3,00	.118	8	0,25	.010	●
KGFR34D	3,00	.118	4	0,25	.010	●



KGT-N



KGT-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGT-N

	W		RL		
catalog number	mm	in	mm	in	KC5025
KGTN2	2,25	.089	0,18	.007	●
KGTN24	2,40	.095	0,18	.007	●
KGTN3J	3,05	.120	0,22	.009	●
KGTN3	3,05	.120	0,22	.009	●
KGTN3W	3,05	.120	0,22	.009	●
KGTN4	4,05	.159	0,24	.009	●
KGTN48	4,80	.189	0,26	.010	●
KGTN5	5,05	.199	0,26	.010	●
KGTN6	6,45	.254	0,28	.011	●

NOTE: RR = RL on neutral inserts.

KGT-R

	W			RL	
catalog number	mm	in	αR	mm	in
KGTR28D	2,25	.089	8	0,18	.007 ●
KGTR24D	2,25	.089	4	0,18	.007 ●
KGTR248D	2,40	.095	8	0,18	.007 ●
KGTR244D	2,40	.095	4	0,18	.007 ●
KGTR38D	3,05	.120	8	0,22	.009 ●
KGTR34D	3,05	.120	4	0,22	.009 ●
KGTR44D	4,05	.159	4	0,24	.009 ●



Threading

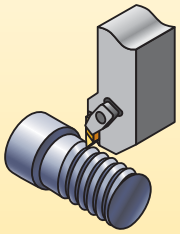
Threading Application Guide E2–E3

Top Notch Threading E4–E39

LT Threading E40–E80

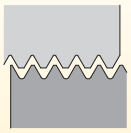
Technical Information E82–E107

Top Notch™ External Threading



Square Shank Toolholder Sizes:
- Inch — .375–1.5"
- Metric — 10–32mm

Fine Pitch

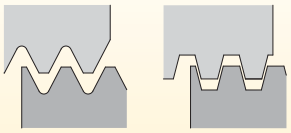


Cresting (Full Profile):
UN maximum TPI of 32
ISO minimum pitch of 1,5mm

**Partial Profile —
Flat Top (NTF and NTK):**
UN maximum TPI of 44
ISO minimum pitch of 0,6mm

**Partial Profile —
Chip Control (NT-K):**
UN maximum TPI of 36
ISO minimum pitch of 0,7mm

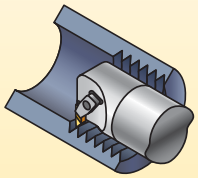
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 7
ISO maximum pitch of 3mm

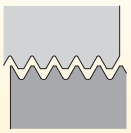
**Partial Profile —
Flat Top and Chip Control
(NT-C and NT-CK):**
UN minimum TPI of 4.5
ISO maximum pitch of 5,5mm

Top Notch Internal Threading



Boring Bar Diameters:
- Inch — .312–2.5"
- Metric — 10–50mm
- Minimum bore — .440" (11,5mm)
- Steel

Fine Pitch

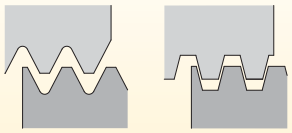


Cresting (Full Profile):
UN maximum TPI of 16
ISO minimum pitch of 1,5mm

**Partial Profile —
Flat Top (NT-1L, NTF and NTK):**
UN maximum TPI of 24
ISO minimum pitch of 1mm

**Partial Profile —
Chip Control (NT-K):**
UN maximum TPI of 20
ISO minimum pitch of 1,25mm

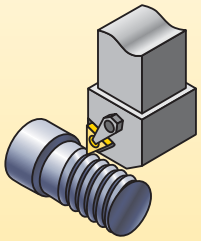
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 3mm

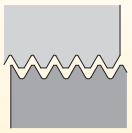
**Partial Profile —
Flat Top and Chip Control
(NT-C and NT-CK):**
UN minimum TPI of 4.5
ISO maximum pitch of 5,5mm

LT Laydown External Threading



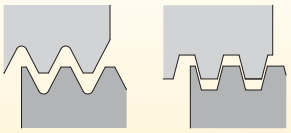
Square Shank Toolholder Sizes:
- Inch — .500–1.25" available
- Metric — 8–40mm available

Fine Pitch



Cresting (Full Profile) and Partial Profile:
UN maximum TPI of 48
ISO minimum pitch of 0,5mm

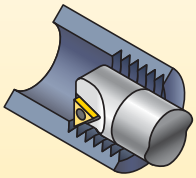
Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 5mm

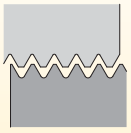
Partial Profile:
UN minimum TPI of 5
ISO maximum pitch of 5mm

LT Laydown Internal Threading



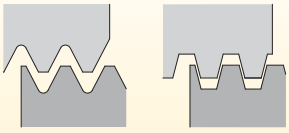
Boring Bar Diameters:
- Inch — .375–1.25"
- Metric — 12–50mm
- Minimum bore — .500" (13mm)
- Steel and carbide

Fine Pitch



Cresting (Full Profile) and Partial Profile:
UN maximum TPI of 48
ISO minimum pitch of 0,5mm

Coarse Pitch/Heavy Duty



Cresting (Full Profile):
UN minimum TPI of 8
ISO maximum pitch of 5mm

Partial Profile:
UN minimum TPI of 5
ISO maximum pitch of 5mm



Top Notch™ Thread Tooling Is the Proven High-Productivity Threading Solution!

Primary Application

Top Notch Threading with Beyond™ Insert technology provides consistent tool performance and superior clamping thread to almost any operation. With the largest selection of grades and geometries in the industry, the Top Notch Threading system is a proven solution.

Features and Benefits

Choosing the Top Notch Threading System

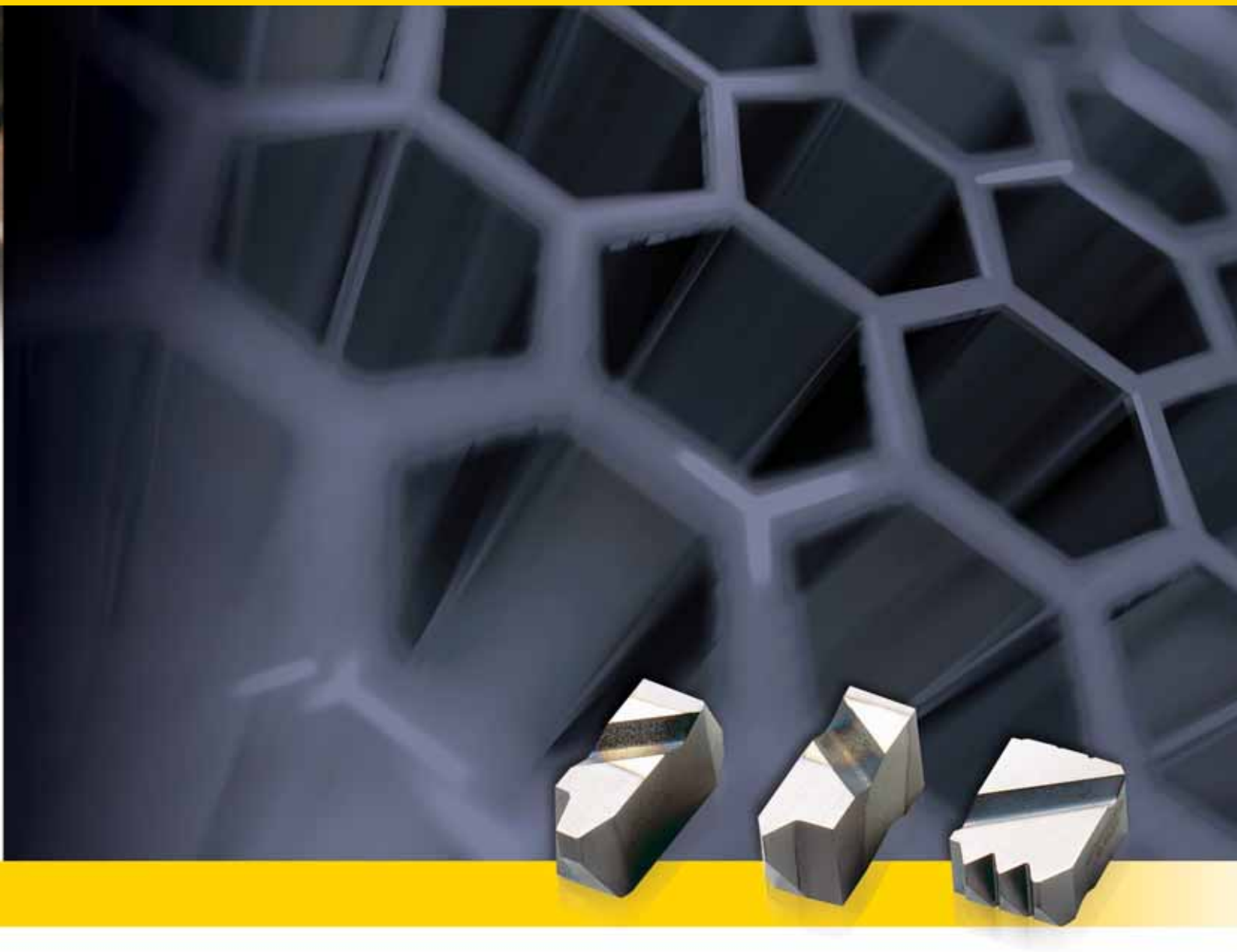
- A superior choice for heavy-duty applications like machining of Acme, Buttress, and API threads. Top Notch is also the best system for coarse pitch and multitooth threading applications.
- Largest selection of insert geometries and grades in the industry.
- A very rigid insert clamping design ensures 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

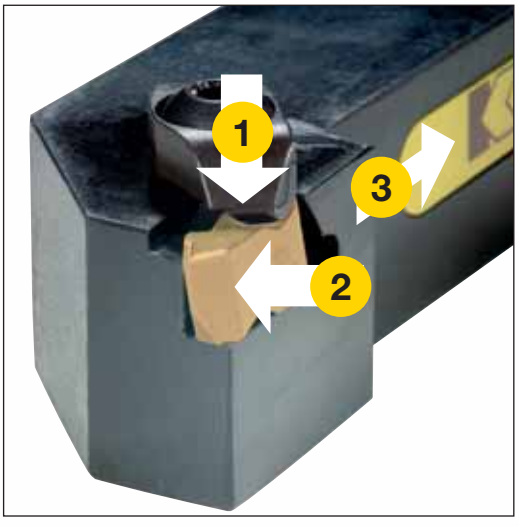
- Minimizes built-up edge.
- Precisely cuts most common materials.
- Reduces cutting forces.
- Ensures accurate high-quality threads.

Superior Chip Control

- Eliminates long, troublesome coils.
- Excellent for internal threading operations.
- Available in partial profile inserts for 60° thread forms.






1
2
3

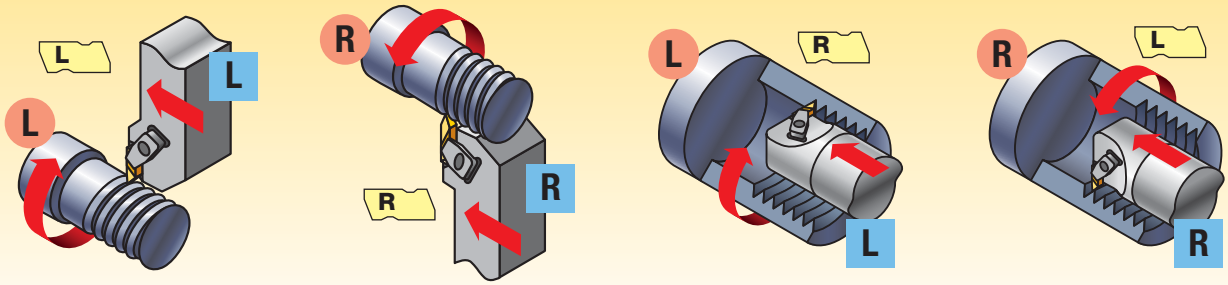
Step 1 • Select threading method and hand of tooling

What you need to know:

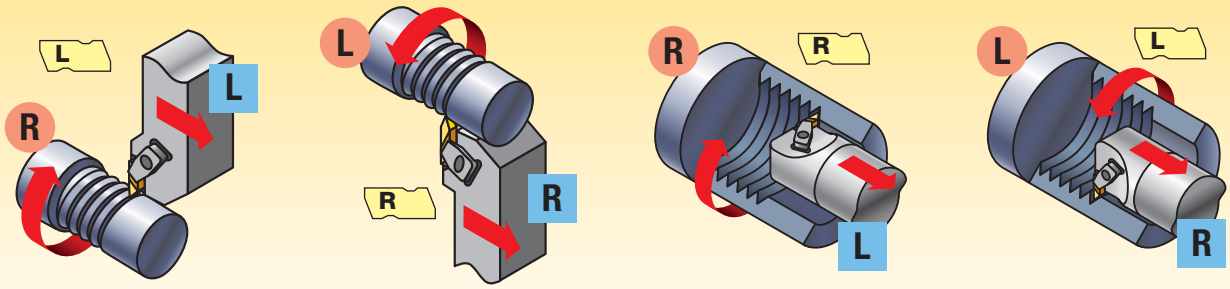
- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.



Feed Direction Toward the Chuck • Standard Helix



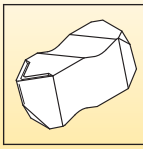
Feed Direction Away from the Chuck • Reverse Helix



NOTE: Top Notch threading bars require opposite hand insert and clamp.
Right-hand bar requires left-hand insert and clamp.
Left-hand bar requires right-hand insert and clamp.

Step 2 • Select insert for application

- See threading insert overview on page E9.
- 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	KCU25/KC5025	KCU10/KC5010
2	NT-2RK	●	●
3	NT-3RK	●	●
4	NT-4RK	●	●

Step 3 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

workpiece material	P	M	K	N	S
insert style	chip control or neutral 	chip control or positive 	neutral 	positive 	positive 
optimum cutting conditions	**KCU10/KC5010** 160–750 (50–230)	**KCU10/KC5010** 160–600 (50–185)	**KCU10/KC5010** 230–700 (70–210)	**KC5410** 230–1300 (70–390)	**KCU10/KC5010** 65–400 (20–120)
first choice	**KCU25/KC5025** 130–650 (40–200)	**KCU25/KC5025** 130–450 (40–135)	**KCU25/KC5025** 200–475 (60–145)	**KCU25/KC5025** 160–1150 (50–360)	**KCU25/KC5025** 35–330 (10–100)

Example
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

Step 4 • Select holder from catalog page

What you need to know:

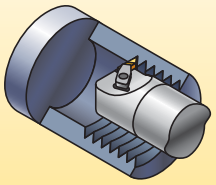
- External/internal operation.
- Minimum bore diameter (for internal operations).
- Hand of tool.
- Insert size (gage insert).

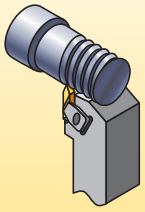
NOTE: The insert size must match the gage insert size of your toolholder selection.

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.

Select the Appropriate Holder for the Insert Size and Hand:



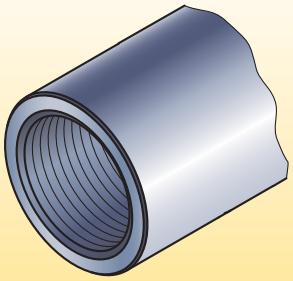


NOTE: Optimize your threading operation by using the proper infeed angle and the recommended infeed values.

Step 5 • Select insert and holder from catalog page

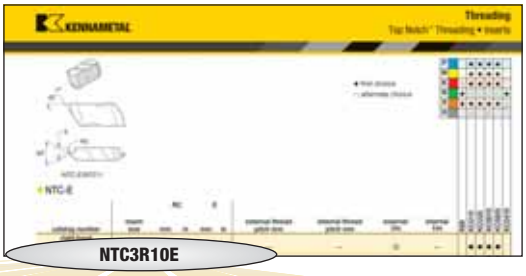
Top Notch Threading Example
Application .....8 TPI Acme internal right-hand thread
Material .....alloy steel
Workpiece diameter .....4.5" (114,3mm) good cutting conditions feed toward the chuck

Recommendation
Insert NA3L8
Grade KC5010
Insert size 3
Boring bar .....A40NER3 (inch) A50UNNTOR4 (metric)
Gage insert.....N.3L
Speed .....500 SFM (150 m/min)
Infeed passes .....12 passes



How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



N — Type of Insert

N = Top Notch*

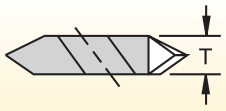
T — Insert Style

A = Acme
D = API or NPT
J = UNJ thread
T = 60° V thread
W = 55° V Whitworth

C — Additional Information

B = Buttress
F = Fine pitch
S = Stub Acme
C = Cresting
P = Positive rake
K = Fine pitch, positive
U = Utility**

3 — Insert Size



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

Industry Thread Identification

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" increments (NJ, NJF, NJP, NJK)

or

M indicates metric ISO thread

R — Hand of Insert

R = Right hand
L = Left hand

10 — Definition of Insert

- Threads per inch or pitch (for metric)
- "A" or "B" type Buttress insert
- Taper per foot — API threads

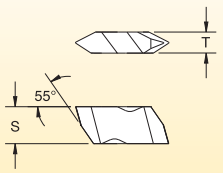
E — Additional Information

I = Internal thread
E = External thread (used only if internal and external thread forms are different)

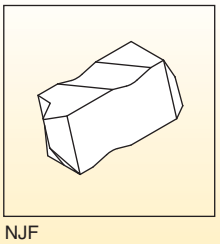
M = Multiple tooth
K = Standard chip control
C = Coarse pitch
D = Dryseal

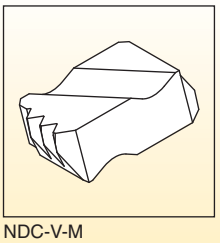
*Kennametal proprietary standard only.
**Utility threading insert can only be used in NSUR/L utility holders.

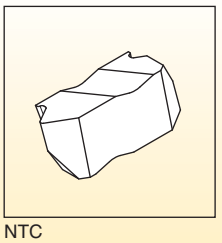
Top Notch Threading and Grooving Insert Dimensions

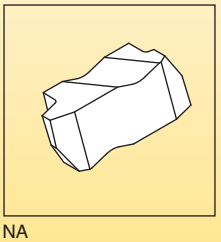


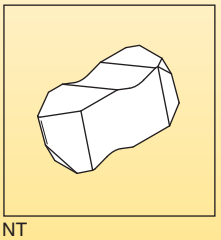
insert size	S inch	S mm	T inch	T mm
1	.100	2,54	.100	2,54
2	.219	5,56	.150	3,81
3	.344	8,74	.195	4,95
4	.453	11,51	.255	6,48
5	.688	17,48	.380	9,65
6	.453	11,51	.383	9,73
8	.312	7,93	.438	11,13

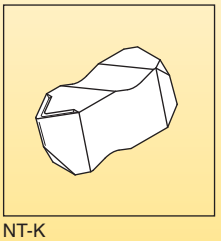

NJF


NDC-V-M

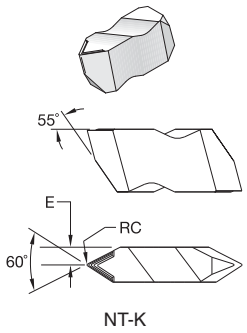

NTC


NA

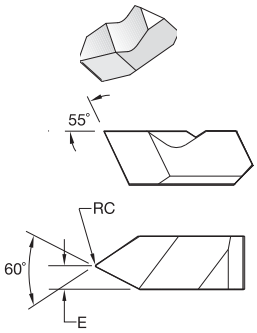

NT


NT-K

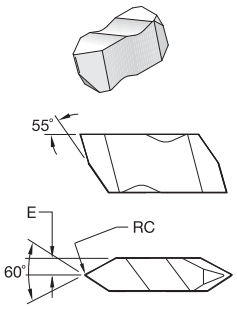
style			thread profile	standard	tolerance class	cresting	application	page(s)
chip control — K	neutral	positive						
 NT-K	 NT	 NTP	Partial Profile 60°	—	—	N	General use for 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	E10–E11
 NT-CK			Partial 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	E11
	 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	E11–E12
	 NTU		Partial Profile 60° — four-edged insert	—	—	N	Four-edged insert for 60° partial profile threading — requires NSU-style toolholder for size 4U insert	E12
	 NTC-M		Metric ISO	ISO R262, DIN 13	6g/6H	Y	Widely used metric 60° V-form for all industries	E12
	 NTC		American UN	ANSI B1.1:03	2A/2B	Y	Widely used inch-based 60° V-form for all industries	E12–E13
	 NJ	 NJP	UNJ	MIL-S-8879C	3A/3B	N	Controlled root radius on external threads for military and aerospace industries	E14
	 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	E15
	 NDC-V		NPT	ANSI B2.1:83	Standard NPT	Y	National Pipe Thread standard forms for pipe fittings	E16
	 NDC-V-M		NPT — multitooth	ANSI B2.1:83	Standard NPT	Y	High productivity multitooth threading inserts for NPT threads	E16
	 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	E17
	 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	E17
	 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	E18
	 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	E18
	 NDC-RD-M		API Round — multitooth	API STD. 5B:1979	Standard API RD	Y	High productivity multitooth threading inserts for API round threads	E18
	 NA		Acme	ANSI B1.5:1988	3G	N	29° truncated thread form for motion applications in a wide variety of industries	E19
	 NAS		Stub Acme	ANSI B1.8:1988	2G	N	Shallow depth 29° truncated thread form for motion applications in a wide variety of industries	E20
	 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	E20
	 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	E21



NT-K



NT-1L



NT

● first choice
○ alternate choice

		K68	KCU10	KCU25	KC5010	KC5025	KC5410
P			●	●	●	●	
M			●	●	●	●	
K		○	●	●	●	●	
N		●	○	○	○	○	●
S		●	●	●	●	●	○
H			○		○		

NT-K

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NT2RK	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20		●	●	●	●	
NT3RK	3	0,17	.0065	2,49	.098	1,25-4,00	2,00-5,00	6-20	5-12		●	●	●	●	
NT4RK	4	0,17	.0065	3,25	.128	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	
left hand															
NT2LK	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20		●	●	●	●	
NT3LK	3	0,17	.0065	2,49	.098	1,25-4,00	2,00-5,00	6-20	5-12		●	●	●	●	
NT4LK	4	0,17	.0065	3,25	.128	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	

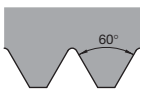
NT-1L

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
left hand															
NT1L	1	0,08	.0030	1,09	.043	–	1,00-2,00	–	12-24	●	●	●	●	●	

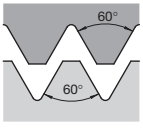
NT

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NT2R	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NT3R	3	0,17	.0065	2,49	.098	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	
NT4R	4	0,17	.0065	3,25	.128	1,25-6,25	2,00-6,25	4-20	4-12	●	●	●	●	●	
left hand															
NT2L	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NT3L	3	0,17	.0065	2,49	.098	1,25-4,0	2,0-5,0	6-20	5-12	●	●	●	●	●	
NT4L	4	0,17	.0065	3,25	.128	1,25-6,25	2,0-6,25	4-20	4-12	●	●	●	●	●	

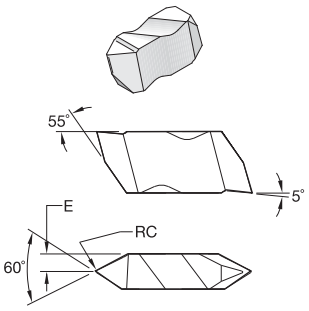
Thread Forms



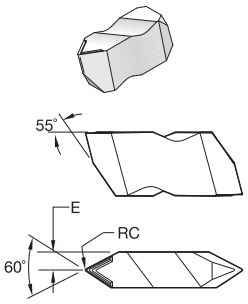
Partial Profile 60°
Internal



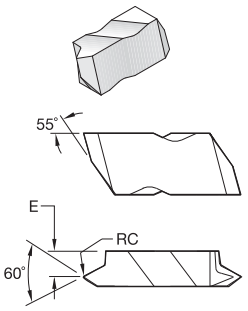
Partial Profile 60°



NTP



NT-CK



NTF

● first choice
○ alternate choice

P		●	●	●	●	
M		●	●	●	●	
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

NTP

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NTP2R	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	●
NTP3R	3	0,17	.0065	2,49	.098	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	●
NTP4R	4	0,17	.0065	3,25	.128	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	
left hand															
NTP2L	2	0,10	.0040	1,91	.075	0,70-3,00	1,25-3,50	8-36	7-20	●	●	●	●	●	
NTP3L	3	0,17	.0065	2,49	.098	1,25-4,00	2,00-5,00	6-20	5-12	●	●	●	●	●	
NTP4L	4	0,17	.0065	3,25	.128	1,25-6,25	2,00-6,25	4-20	4-12		●	●	●	●	

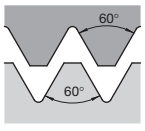
NT-CK

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NT3RCK	3	0,34	.0135	2,46	.097	2,5-4,0	4,0	6-11	6		●	●	●	●	
NT4RCK	4	0,34	.0135	3,23	.127	2,5-5,5	4,0-5,5	4.5-11	4.5-6		●	●	●	●	
left hand															
NT3LCK	3	0,34	.0135	2,46	.097	2,5-4,0	4,0	6-11	6		●	●	●	●	
NT4LCK	4	0,34	.0135	3,23	.127	2,5-5,5	4,0-5,5	4.5-11	4.5-6			●	●	●	

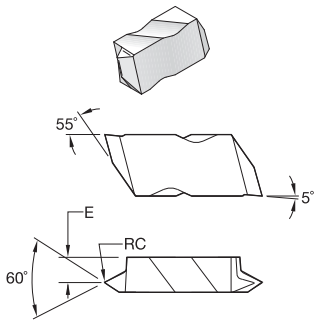
NTF

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NTF2R	2	0,08	.0030	2,79	.110	0,60-1,75	1,0-2,0	14-44	12-24	●	●	●	●	●	
NTF3R	3	0,08	.0030	3,58	.141	0,60-2,5	1,0-2,5	10-44	9-24	●	●	●	●	●	
NTF4R	4	0,08	.0030	5,11	.201	0,60-2,5	1,0-2,5	10-44	9-24	●				●	
left hand															
NTF2L	2	0,08	.0030	2,79	.110	0,60-1,75	1,0-2,0	14-44	12-24	●	●	●	●	●	
NTF3L	3	0,08	.0030	3,58	.141	0,60-2,5	1,0-2,5	10-44	9-24	●	●	●	●	●	
NTF4L	4	0,08	.0030	5,11	.201	0,60-2,5	1,0-2,5	10-44	9-24					●	

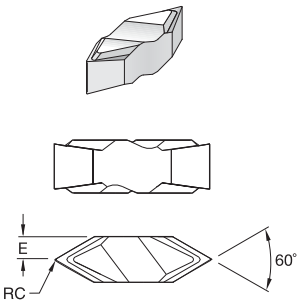
Thread Forms



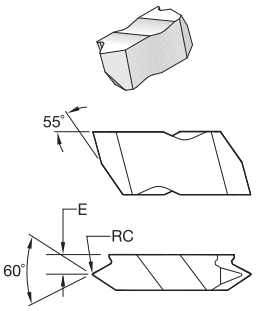
Partial Profile 60°



NTK



NTU



NTC-M-E

● first choice
○ alternate choice

P		●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

NTK

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand **NTK2R**	2	0,08	.0030	2,79	.110	0,60-1,75	1,00-2,00	14-44	12-24	●	●	●	●	●	
NTK3R left hand	3	0,08	.0030	3,58	.141	0,60-2,50	1,00-2,50	10-44	9-24	●	●	●	●	●	
NTK2L	2	0,08	.0030	2,79	.110	0,60-1,75	1,00-2,00	14-44	12-24	●	●	●	●	●	
NTK3L	3	0,08	.0030	3,58	.141	0,60-2,50	1,00-2,50	10-44	9-24	●	●	●	●	●	

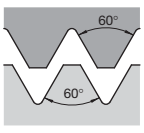
NTU

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand **NTU4R**	4U	0,11	.0045	3,18	.125	1,25-6,25	–	4-20	–			●		●	

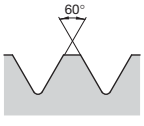
NTC-M-E

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand **NTC3MR150E**	3	0,20	.0080	3,68	.145	1,50	–	–	–		●		●	●	
NTC3MR200E	3	0,27	.0106	3,68	.145	2,00	–	–	–		●		●		

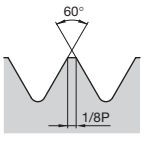
Thread Forms



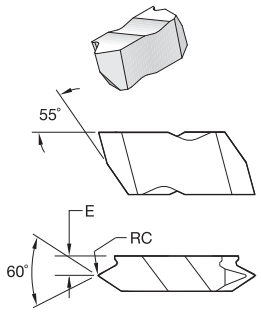
Partial Profile 60°



Partial Profile 60° External



ISO Metric-External



NTC-E/NTC-I

● first choice
○ alternate choice

P	●	●	●	●		
M	●	●	●	●		
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

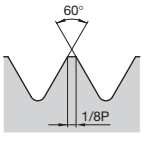
NTC-E

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NTC3R10E	3	0,32	.0124	2,72	.107	–	–	10	–		●	●	●	●	
NTC3R11E	3	0,28	.0111	2,72	.107	–	–	11	–		●		●	●	
NTC3R12E	3	0,25	.0100	3,76	.148	–	–	12	–		●	●	●	●	
NTC3R13E	3	0,24	.0096	3,76	.148	–	–	13	–		●	●	●	●	
NTC3R14E	3	0,22	.0088	3,76	.148	–	–	14	–		●	●	●	●	
NTC3R16E	3	0,19	.0075	3,76	.148	–	–	16	–		●	●	●	●	
NTC3R18E	3	0,18	.0070	3,76	.148	–	–	18	–		●	●	●	●	
NTC3R20E	3	0,16	.0062	3,76	.148	–	–	20	–		●	●	●	●	
NTC3R24E	3	0,13	.0053	3,76	.148	–	–	24	–		●	●	●	●	
NTC3R28E	3	0,12	.0046	3,76	.148	–	–	28	–					●	
NTC3R32E	3	0,10	.0040	3,76	.148	–	–	32	–		●		●	●	
NTC3R7E	3	0,47	.0186	2,72	.107	–	–	7	–					●	
NTC3R8E	3	0,41	.0160	2,72	.107	–	–	8	–		●	●	●	●	
NTC3R9E	3	0,36	.0140	2,72	.107	–	–	9	–		●		●	●	
left hand															
NTC3L10E	3	0,32	.0124	2,72	.107	–	–	10	–		●		●		
NTC3L12E	3	0,25	.0100	3,76	.148	–	–	12	–		●		●	●	
NTC3L16E	3	0,19	.0075	3,76	.148	–	–	16	–		●		●	●	
NTC3L8E	3	0,41	.0160	2,72	.107	–	–	8	–				●		

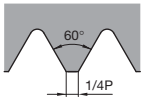
NTC-I

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI						
right hand															
NTC3R12I	3	0,10	.0040	3,76	.148	–	–	–	12			●		●	
NTC3R8I	3	0,18	.0070	2,72	.107	–	–	–	8			●		●	
left hand															
NTC3L10I	3	0,13	.0052	2,72	.107	–	–	–	10			●		●	
NTC3L12I	3	0,10	.0040	3,76	.148	–	–	–	12			●		●	
NTC3L14I	3	0,09	.0037	3,76	.148	–	–	–	14			●		●	
NTC3L16I	3	0,08	.0030	3,76	.148	–	–	–	16			●		●	
NTC3L8I	3	0,18	.0070	2,72	.107	–	–	–	8			●		●	

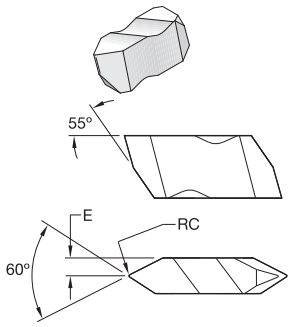
Thread Forms



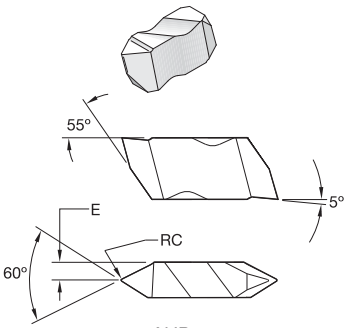
American
UN-External



American
UN-Internal



NJ



NJP

● first choice
○ alternate choice

P		●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

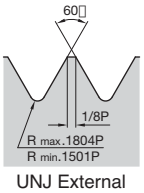
NJ

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NJ3010R16	3	0,25	.0099	2,49	.098	–	–	16	–	●		●		●	
NJ3014R12	3	0,33	.0130	2,49	.098	–	–	12	–		●	●	●	●	
NJ3020R8	3	0,49	.0193	2,49	.098	–	–	8	–		●	●	●	●	
left hand															
NJ3010L16	3	0,25	.0099	2,49	.098	–	–	16	–					●	
NJ3014L12	3	0,33	.0130	2,49	.098	–	–	12	–		●	●	●	●	
NJ3020L8	3	0,49	.0193	2,49	.098	–	–	8	–					●	

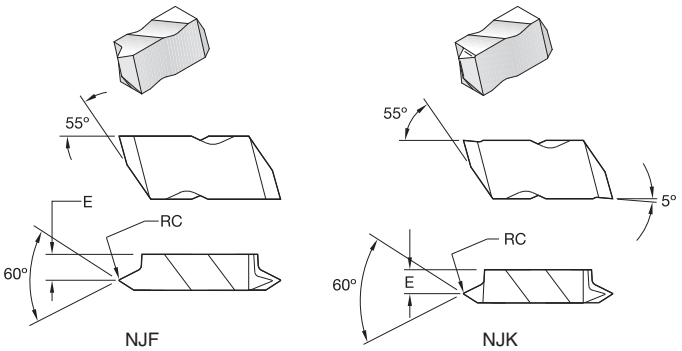
NJP

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NJP3010R16	3	0,25	.0099	2,49	.098	–	–	16	–		●	●	●	●	
NJP3014R12	3	0,33	.0130	2,49	.098	–	–	12	–	●	●	●	●	●	
NJP3020R8	3	0,49	.0193	2,49	.098	–	–	8	–		●	●	●	●	
left hand															
NJP3010L16	3	0,25	.0099	2,49	.098	–	–	16	–					●	
NJP3014L12	3	0,33	.0130	2,49	.098	–	–	12	–		●	●	●	●	
NJP3020L8	3	0,49	.0193	2,49	.098	–	–	8	–			●		●	

Thread Forms



UNJ External



● first choice
○ alternate choice

P	●	●	●	●		
M	●	●	●	●		
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

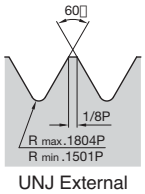
NJF

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NJF3005R32	3	0,13	.0052	3,58	.141	–	–	32	–		●		●		
NJF3006R28	3	0,15	.0059	3,58	.141	–	–	28	–	●	●		●	●	
NJF3007R24	3	0,17	.0068	3,58	.141	–	–	24	–		●	●	●	●	
NJF3008R20	3	0,20	.0078	3,58	.141	–	–	20	–		●	●	●	●	
NJF3009R18	3	0,22	.0088	3,58	.141	–	–	18	–	●	●	●	●	●	
NJF3010R16	3	0,25	.0099	3,58	.141	–	–	16	–	●	●	●	●	●	
NJF3012R14	3	0,28	.0112	3,58	.141	–	–	14	–		●	●	●	●	
left hand															
NJF3007L24	3	0,17	.0068	3,58	.141	–	–	24	–				●		
NJF3008L20	3	0,20	.0078	3,58	.141	–	–	20	–				●		
NJF3009L18	3	0,22	.0088	3,58	.141	–	–	18	–				●		

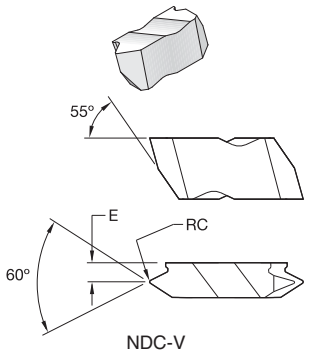
NJK

catalog number	insert size	RC mm	RC in	E mm	E in	external thread pitch mm	internal thread pitch mm	external TPI	internal TPI	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NJK3005R32	3	0,13	.0052	3,58	.141	–	–	32	–		●	●	●	●	
NJK3006R28	3	0,15	.0059	3,58	.141	–	–	28	–		●	●	●	●	
NJK3007R24	3	0,17	.0068	3,58	.141	–	–	24	–		●	●	●	●	
NJK3008R20	3	0,20	.0078	3,58	.141	–	–	20	–		●	●	●	●	
NJK3009R18	3	0,22	.0088	3,58	.141	–	–	18	–		●	●	●	●	
NJK3010R16	3	0,25	.0099	3,58	.141	–	–	16	–	●	●	●	●	●	
NJK3012R14	3	0,28	.0112	3,58	.141	–	–	14	–		●		●	●	
left hand															
NJK3005L32	3	0,13	.0052	3,58	.141	–	–	32	–					●	
NJK3006L28	3	0,15	.0059	3,58	.141	–	–	28	–					●	
NJK3008L20	3	0,20	.0078	3,58	.141	–	–	20	–			●		●	
NJK3012L14	3	0,28	.0112	3,58	.141	–	–	14	–					●	

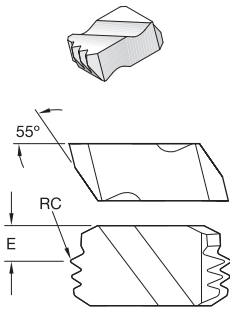
Thread Forms



UNJ External



NDC-V



NDC-V-M • Multitooth

● first choice
○ alternate choice

		K68	KCU10	KCU25	KC5010	KC5025	KC5410
P			●	●	●	●	
M			●	●	●	●	
K		○	●	●	●	●	
N		●	○	○	○	○	●
S		●	●	●	●	●	○
H			○		○		

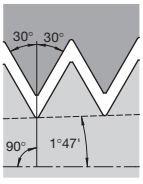
NDC-V

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NDC3115VR75	3	0,10	.0040	3,66	.144	11.5	.750		●		●		
NDC314VR75	3	0,08	.0030	3,66	.144	14	.750		●		●		
NDC327VR75	3	0,05	.0020	3,66	.144	27	.750		●		●		
NDC38VR75	3	0,13	.0050	2,54	.100	8	.750		●		●		
left hand													
NDC3115VL75	3	0,10	.0040	3,66	.144	11.5	.750		●		●		
NDC38VL75	3	0,13	.0050	2,54	.100	8	.750		●		●		

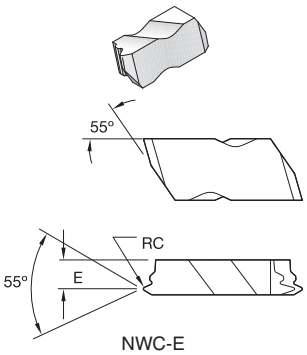
NDC-V-M • Multitooth

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NDC8115VR75M	8	0,10	.0040	2,59	.102	11.5	.750		●		●		
NDC88VR75M	8	0,13	.0050	2,41	.095	8	.750		●		●		
left hand													
NDC8115VL75M	8	0,10	.0040	2,59	.102	11.5	.750				●		
NDC88VL75M	8	0,13	.0050	2,41	.095	8	.750		●		●		

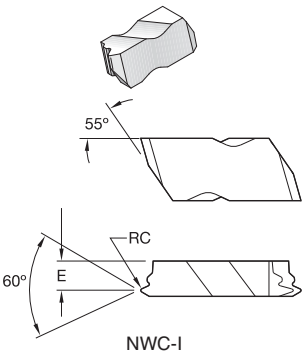
Thread Forms



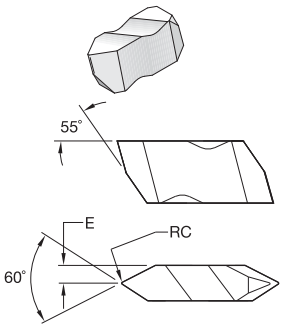
NPT



NWC-E



NWC-I



ND • Partial Profile

● first choice
○ alternate choice

P		●	●	●	●	
M		●	●	●	●	
K	○	●	●	●	●	
N	●	○	○	○	○	●
S	●	●	●	●	●	○
H		○		○		

NWC-E

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NWC3R11E	3	0,30	.0118	3,43	.135	11	–		●	●	●	●	
NWC3R14E	3	0,24	.0093	3,43	.135	14	–			●	●	●	

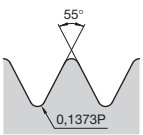
NWC-I

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF
left hand							
NWC3L11I	3	0,30	.0118	3,43	.135	11	–

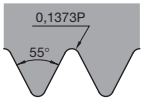
ND • Partial Profile

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF
right hand							
ND3038R	3	0,90	.0355	2,08	.082	4	–
ND3040R	3	0,45	.0175	2,08	.082	5	–
ND4050R	4	0,57	.0225	3,25	.128	4	–
left hand							
ND3038L	3	0,90	.0355	2,08	.082	4	–
ND3040L	3	0,45	.0175	2,08	.082	5	–
ND4040L	4	0,45	.0175	3,25	.128	5	–
ND4050L	4	0,57	.0225	3,25	.128	4	–

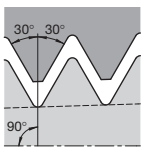
Thread Forms



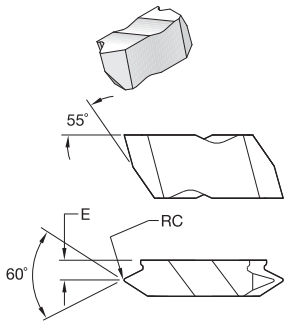
Whitworth BSW, BSP-External



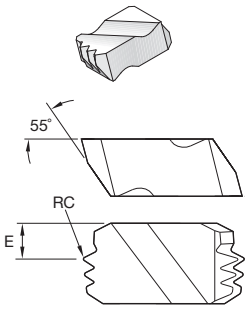
Whitworth BSW, BSP-Internal



API Rotary Shoulder Connections



NDC/NDC-RD



NDC-RD-M • Multitooth

● first choice
○ alternate choice

P	●	●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

NDC • Cresting

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NDC3040R3	3	0,45	.0175	3,73	.147	5	3.000			●		●	
NDC4038R2	4	0,90	.0355	4,65	.183	4	2.000		●	●	●	●	
NDC4040R3	4	0,45	.0175	3,73	.147	5	3.000					●	
NDC4050R2	4	0,57	.0225	4,65	.183	4	2.000		●	●	●	●	
NDC4050R3	4	0,57	.0225	4,65	.183	4	3.000			●	●	●	
left hand													
NDC3040L3	3	0,45	.0175	3,73	.147	5	3.000		●		●		
NDC4038L2	4	0,90	.0355	4,65	.183	4	2.000		●	●	●	●	
NDC4040L3	4	0,45	.0175	3,73	.147	5	3.000					●	
NDC4050L2	4	0,57	.0225	4,65	.183	4	2.000			●		●	
NDC4050L3	4	0,57	.0225	4,65	.183	4	3.000		●		●		

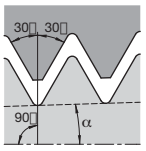
NDC-RD

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NDC310RDR75	3	0,36	.0140	3,18	.125	10	.750		●	●	●	●	
NDC38RDR75	3	0,43	.0170	3,18	.125	8	.750		●	●	●	●	
left hand													
NDC310RDL75	3	0,36	.0140	3,18	.125	10	.750			●	●	●	
NDC38RDL75	3	0,43	.0170	3,18	.125	8	.750		●	●	●	●	

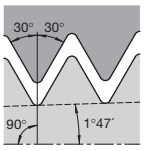
NDC-RD-M • Multitooth

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NDC68RDR75M	6	0,41	.0160	2,62	.103	8	.750		●		●		
left hand													
NDC68RDL75M	6	0,41	.0160	2,62	.103	8	.750		●		●		

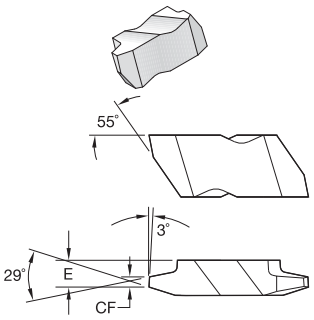
Thread Forms



API Rotary Shoulder Connections



API Round



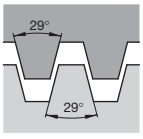
● first choice
○ alternate choice

P		●	●	●	●		
M		●	●	●	●		
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

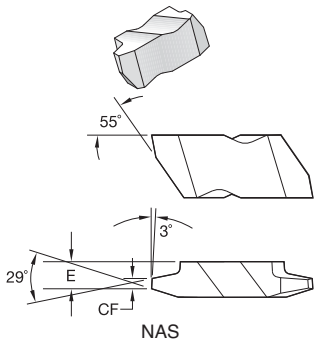
NA

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NA3R10	3	–	–	3,79	.149	10	–		●	●	●	●	
NA3R12	3	–	–	3,79	.149	12	–		●		●	●	
NA3R16	3	–	–	3,79	.149	16	–		●		●		
NA3R4	3	–	–	3,38	.133	4	–		●	●	●	●	
NA3R5	3	–	–	3,79	.149	5	–		●	●	●	●	
NA3R6	3	–	–	3,79	.149	6	–		●	●	●	●	
NA3R8	3	–	–	3,79	.149	8	–		●	●	●	●	
NA4R4	4	–	–	5,13	.202	4	–		●	●	●	●	
NA4R5	4	–	–	5,13	.202	5	–			●		●	
NA4R6	4	–	–	5,13	.202	6	–			●		●	
NA4R8	4	–	–	5,13	.202	8	–					●	
NA6R2	6	–	–	7,19	.283	2	–		●	●	●	●	
NA6R25	6	–	–	7,19	.283	2.5	–			●		●	
NA6R3	6	–	–	7,19	.283	3	–			●		●	
left hand													
NA3L10	3	–	–	3,79	.149	10	–			●		●	
NA3L12	3	–	–	3,79	.149	12	–		●		●	●	
NA3L14	3	–	–	3,79	.149	14	–					●	
NA3L4	3	–	–	3,38	.133	4	–	●	●	●	●	●	
NA3L5	3	–	–	3,79	.149	5	–		●	●	●	●	
NA3L6	3	–	–	3,79	.149	6	–		●	●	●	●	
NA3L8	3	–	–	3,79	.149	8	–		●	●	●	●	
NA4L4	4	–	–	5,13	.202	4	–		●	●	●	●	
NA4L5	4	–	–	5,13	.202	5	–			●		●	
NA4L6	4	–	–	5,13	.202	6	–			●		●	
NA4L8	4	–	–	5,13	.202	8	–			●		●	
NA6L2	6	–	–	7,19	.283	2	–		●	●	●	●	
NA6L25	6	–	–	7,19	.283	2.5	–			●		●	
NA6L3	6	–	–	7,19	.283	3	–			●		●	

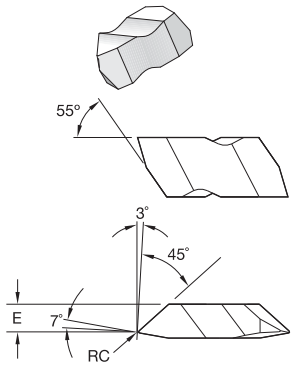
Thread Forms



Acme



NAS



NTB-A

● first choice
○ alternate choice

P	●	●	●	●			
M	●	●	●	●			
K	○	●	●	●	●		
N	●	○	○	○	○	●	
S	●	●	●	●	●	○	
H		○		○			

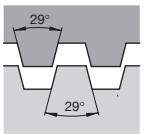
NAS

catalog number	insert size	RC mm	RC in	CF mm	CF in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand															
NAS3R10	3	–	–	0,940	.0370	3,79	.149	10	–		●	●	●	●	
NAS3R12	3	–	–	0,828	.0326	3,79	.149	12	–			●		●	
NAS3R14	3	–	–	0,701	.0276	3,79	.149	14	–					●	
NAS3R16	3	–	–	0,605	.0238	3,79	.149	16	–					●	
NAS3R4	3	–	–	2,550	.1004	3,79	.149	–	–			●		●	
NAS3R5	3	–	–	2,014	.0793	3,79	.149	5	–		●	●	●	●	
NAS3R6	3	–	–	1,656	.0652	3,79	.149	6	–		●	●	●	●	
NAS3R8	3	–	–	1,209	.0476	3,79	.149	8	–		●	●	●	●	
left hand															
NAS3L10	3	–	–	0,940	.0370	3,79	.149	10	–		●	●	●	●	
NAS3L12	3	–	–	0,828	.0326	3,79	.149	12	–			●		●	
NAS3L16	3	–	–	0,605	.0238	3,79	.149	16	–					●	
NAS3L4	3	–	–	2,550	.1004	3,79	.149	–	–			●		●	
NAS3L5	3	–	–	2,014	.0793	3,79	.149	5	–		●		●	●	
NAS3L6	3	–	–	1,656	.0652	3,79	.149	6	–		●	●	●	●	
NAS3L8	3	–	–	1,209	.0476	3,79	.149	8	–		●	●	●	●	

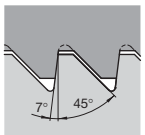
NTB-A

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTB2RA	2	0,08	.0030	3,20	.126	16-20	–	●	●		●		
NTB3RA	3	0,17	.0065	4,17	.164	8-16	–		●	●	●	●	
NTB4RA	4	0,25	.0100	5,23	.206	4-6	–		●		●		
left hand													
NTB2LA	2	0,08	.0030	3,20	.126	16-20	–					●	
NTB3LA	3	0,17	.0065	4,17	.164	8-16	–	●	●	●	●	●	
NTB4LA	4	0,25	.0100	5,23	.206	4-6	–				●	●	

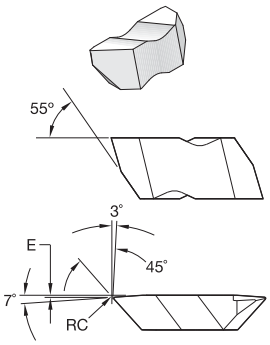
Thread Forms



Stub Acme



American Buttress-Push



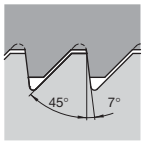
● first choice
○ alternate choice

P			●	●	●	●							
M			●	●	●	●							
K		○	●	●	●	●							
N		●	○	○	○	○	●						
S		●	●	●	●	●	○						
H			○		○								

NTB-B

catalog number	insert size	RC mm	RC in	E mm	E in	TPI	TPF	K68	KCU10	KCU25	KC5010	KC5025	KC5410
right hand													
NTB2RB	2	0,08	.0030	0,25	.010	16-20	–		●		●	●	
NTB3RB	3	0,17	.0065	0,31	.012	8-16	–	●	●	●	●	●	
NTB4RB	4	0,25	.0100	0,41	.016	4-6	–		●	●	●	●	
left hand													
NTB2LB	2	0,08	.0030	0,25	.010	16-20	–		●		●		
NTB3LB	3	0,17	.0065	0,31	.012	8-16	–	●	●	●	●	●	
NTB4LB	4	0,25	.0100	0,41	.016	4-6	–		●	●	●	●	

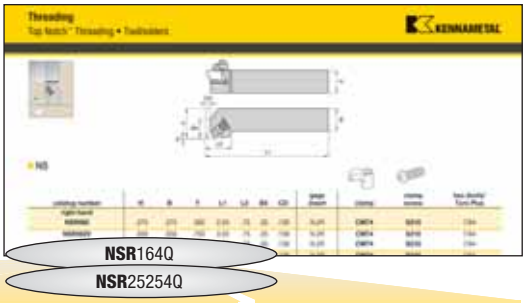
Thread Forms



American
Buttress-Pull

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

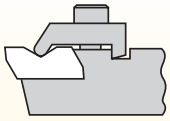


Inch

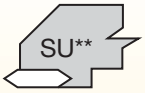
N	S	R	

Metric

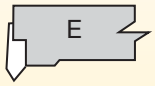
N	S	R	
Insert Holding Loctaion	Insert Mounting Location	Hand of Tool	Drop Head



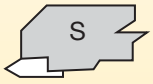
N = Top Notch*



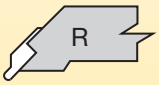
SU = Side mount utility



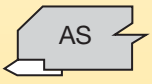
E = End



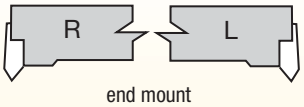
S = Side mount, offset



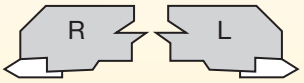
R = Undercut



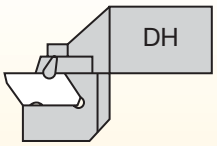
AS = Side mount, no offset



end mount

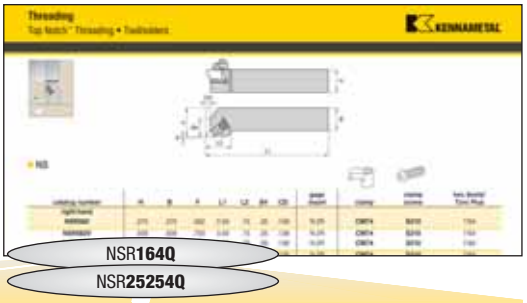


side mount



*Kennametal proprietary standard only.
**Side mount utility holder can only use NTU inserts.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



Inch

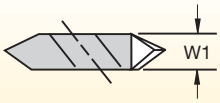
16	4	Q

Metric

2525	4	Q
Shank Size	Insert Size	Qualified Surface and Length

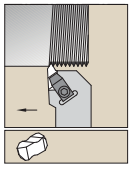
inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and larger, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by 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.

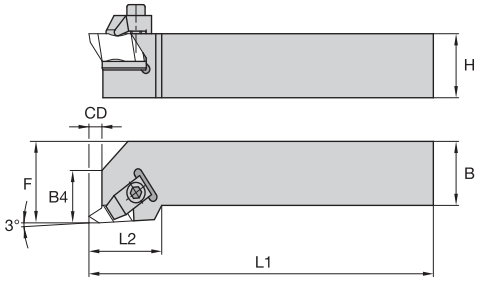
metric:
Shank height and width in mm and holder length according to ISO standard.



insert size	W1
2	.150"
3	.195"
4	.255"
5	.380"
6	.383"
8	.438"

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

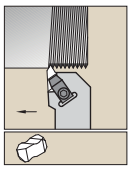


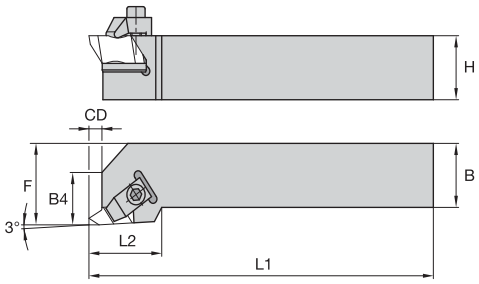


NS

catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand											
NSR062	.375	.375	.562	2.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR082V	.500	.500	.750	3.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR102B	.625	.625	.875	4.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR122B	.750	.750	1.000	4.50	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR162C	1.000	1.000	1.250	5.00	.75	.35	.138	N.2R	**CM74**	**S310**	7/64
NSR123A	.750	.750	1.000	4.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR123B	.750	.750	1.000	4.50	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR163C	1.000	1.000	1.250	5.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR163D	1.000	1.000	1.250	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR203D	1.250	1.250	1.500	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR853D	1.250	1.000	1.250	6.00	1.25	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR243D	1.500	1.500	2.000	6.00	1.38	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR243E	1.500	1.500	2.000	7.00	1.38	.50	.210	N.3R	**CM72LP**	**S2112**	25 IP
NSR205D	1.250	1.250	1.500	6.00	2.00	.61	.415	N.5R	**CM80**	**S352**	1/4
NSR245D	1.500	1.500	2.000	6.00	2.00	.61	.415	N.5R	**CM80**	**S352**	1/4
left hand											
NSL062	.375	.375	.562	2.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL082V	.500	.500	.750	3.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL102B	.625	.625	.875	4.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL122B	.750	.750	1.000	4.50	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL162C	1.000	1.000	1.250	5.00	.75	.35	.138	N.2L	**CM75**	**S310**	7/64
NSL123A	.750	.750	1.000	4.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL123B	.750	.750	1.000	4.50	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL163C	1.000	1.000	1.250	5.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL163D	1.000	1.000	1.250	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL853D	1.250	1.000	1.250	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL203D	1.250	1.250	1.500	6.00	1.25	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL243D	1.500	1.500	2.000	6.00	1.38	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL243E	1.500	1.500	2.000	7.00	1.38	.50	.210	N.3L	**CM73LP**	**S2112**	25 IP
NSL205D	1.250	1.250	1.500	6.00	2.00	.61	.415	N.5L	**CM81**	**S352**	1/4

NOTE: F dimension measured over sharp point of N-style threading insert.





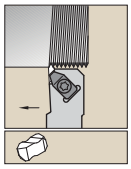
NS (with shim)



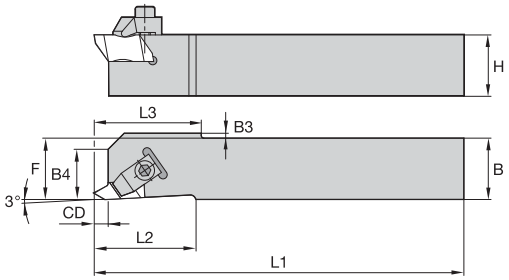



catalog number	H	B	F	L1	L2	B4	CD	gage insert	shim	shim screw	clamp	clamp screw	hex (inch)/ Torx Plus
right hand													
NSR164C	1.000	1.000	1.250	5.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR164D	1.000	1.000	1.250	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR854D	1.250	1.000	1.250	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR204C	1.250	1.250	1.500	5.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR204D	1.250	1.250	1.500	6.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR864E	1.500	1.000	1.250	7.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR244D	1.500	1.500	2.000	6.00	1.50	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR244E	1.500	1.500	2.000	7.00	1.50	.54	.294	N.4R	**SM420**	**SL344**	**CM72LP**	**S2112**	25 IP
NSR166D	1.000	1.000	1.250	6.00	1.38	.67	.334	N.6R	**SM416**	**S111**	**CM120**	**S412**	5/32
NSR206D	1.250	1.250	1.500	6.00	1.38	.67	.334	N.6R	**SM416**	**S111**	**CM120**	**S412**	5/32
NSR246D	1.500	1.500	2.000	6.00	1.50	.67	.334	N.6R	**SM416**	**S111**	**CM120**	**S412**	5/32
NSR168D	1.000	1.000	1.250	6.00	1.25	.72	.225	N.8R	**SM419**	**S112**	**CM144**	**S422**	3/16
left hand													
NSL164C	1.000	1.000	1.250	5.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL164D	1.000	1.000	1.250	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL854D	1.250	1.000	1.250	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL204C	1.250	1.250	1.500	5.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL204D	1.250	1.250	1.500	6.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL864E	1.500	1.000	1.250	7.00	1.38	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL244D	1.500	1.500	2.000	6.00	1.50	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL244E	1.500	1.500	2.000	7.00	1.50	.54	.294	N.4L	**SM420**	**SL344**	**CM73LP**	**S2112**	25 IP
NSL166D	1.000	1.000	1.250	6.00	1.38	.67	.334	N.6L	**SM416**	**S111**	**CM121**	**S412**	5/32
NSL206D	1.250	1.250	1.500	6.00	1.38	.67	.334	N.6L	**SM416**	**S111**	**CM121**	**S412**	5/32
NSL246D	1.500	1.500	2.000	6.00	1.50	.67	.334	N.6L	**SM416**	**S111**	**CM121**	**S412**	5/32

NOTE: F dimension measured over sharp point of N-style threading insert.



See page E10 for inserts.

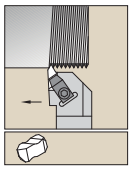


NAS

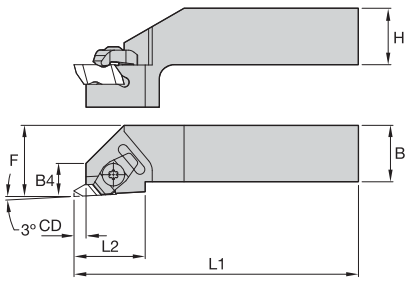



catalog number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand													
NASR062D	.375	.375	.375	6.00	.75	.35	.138	.070	.88	N.2R	**CM182**	**S310**	7/64
NASR082D	.500	.500	.500	6.00	.75	.35	.138	—	—	N.2R	**CM182**	**S310**	7/64
NASR102B	.625	.625	.625	4.50	.75	.35	.138	—	—	N.2R	**CM74**	**S310**	7/64
NASR083D	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	N.3R	**CM184LP**	**S2112**	25 IP
NASR103B	.625	.625	.625	4.50	1.30	—	.210	—	—	N.3R	**CM184LP**	**S2112**	25 IP
left hand													
NASL062D	.375	.375	.375	6.00	.75	.35	.138	.070	.88	N.2L	**CM183**	**S310**	7/64
NASL082D	.500	.500	.500	6.00	.75	.35	.138	—	—	N.2L	**CM183**	**S310**	7/64
NASL102B	.625	.625	.625	4.50	.75	.35	.138	—	—	N.2L	**CM75**	**S310**	7/64
NASL083D	.500	.500	.500	6.00	1.25	.50	.210	.125	1.32	N.3L	**CM185LP**	**S2112**	25 IP
NASL103B	.625	.625	.625	4.50	1.30	—	.210	—	—	N.3L	**CM185LP**	**S2112**	25 IP

NOTE: F dimension measured over sharp point of N-style threading insert.



See page E10 for inserts.



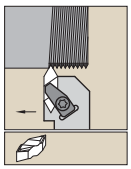
NS-DH

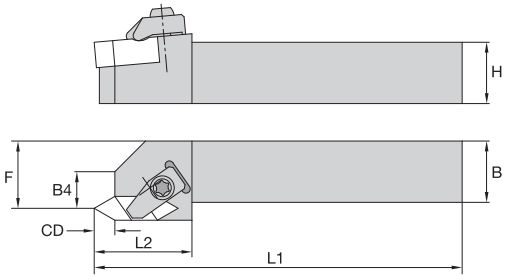




catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus	jack screw	hex (inch)
right hand													
NSRDH122B	.750	.750	1.000	4.500	.75	.40	.138	N.2R	**CM74**	**S310**	7/64	**S1020**	1/8
NSRDH162C	1.000	1.000	1.250	5.000	.75	.40	.138	N.2R	**CM74**	**S310**	7/64	**S1020**	1/8
NSRDH123A	.750	.750	1.250	4.000	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—	—
NSRDH163C	1.000	1.000	1.250	5.000	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—	—
NSRDH163D	1.000	1.000	1.250	6.000	1.25	.58	.210	N.3R	**CM72LP**	**S2112**	25 IP	—	—
NSRDH203D	1.250	1.250	1.500	6.000	1.25	.62	.210	N.3R	**CM72LP**	**S2112**	25 IP	**S965**	3/16
NSRDH204D	1.250	1.250	1.500	6.000	1.38	.62	.294	N.4R	**CM72LP**	**S2112**	25 IP	**S965**	3/16
left hand													
NSLDH203D	1.250	1.250	1.500	6.000	1.25	.62	.210	N.3L	**CM73LP**	**S2112**	25 IP	**S965**	3/16

NOTE: F dimension measured over sharp point of N-style threading insert.

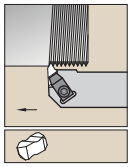


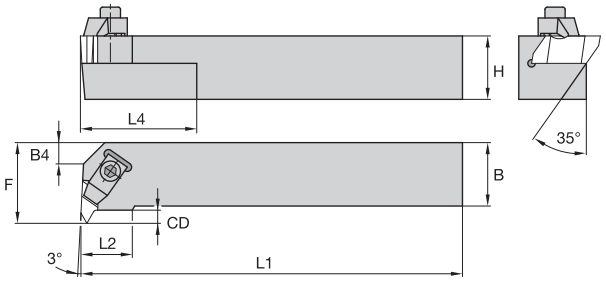


NSU

catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	Torx Plus
right hand											
NSUR124C	.750	.750	.875	5.00	1.25	.50	.240	NTU4R	**CM72LP**	**S2112**	25 IP
NSUR164D	1.000	1.000	1.125	6.00	1.25	.50	.240	NTU4R	**CM72LP**	**S2112**	25 IP
left hand											
NSUL124C	.750	.750	.875	5.00	1.25	.50	.240	NTU4L	**CM73LP**	**S2112**	25 IP
NSUL164D	1.000	1.000	1.125	6.00	1.25	.50	.240	NTU4L	**CM73LP**	**S2112**	25 IP

NOTE: Toolholders only for threading inserts NTU4...
F dimension measured over sharp point of Top Notch-style threading insert.





NE




catalog number	H	B	F	L1	L2	B4	CD	L4	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand												
NER062	.375	.375	.750	2.50	.50	—	.138	1.000	N.2L	**CM75**	**S310**	7/64
NER082V	.500	.500	.750	3.50	.50	—	.138	1.000	N.2L	**CM75**	**S310**	7/64
NER102B	.625	.625	.750	4.50	—	—	.138	1.000	N.2L	**CM75**	**S310**	7/64
NER122B	.750	.750	1.000	4.50	.50	.29	.138	1.000	N.2L	**CM75**	**S310**	7/64
NER162C	1.000	1.000	1.250	5.00	.50	.41	.138	1.000	N.2L	**CM75**	**S310**	7/64
NER123B	.750	.750	1.125	4.50	.75	—	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER163C	1.000	1.000	1.250	5.00	.75	—	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER163D	1.000	1.000	1.250	6.00	.75	—	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER853D	1.250	1.000	1.250	6.00	.75	—	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER203D	1.250	1.250	1.500	6.00	.75	.26	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER243D	1.500	1.500	2.000	6.00	.75	.76	.210	2.000	N.3L	**CM73LP**	**S2112**	25 IP
NER164C	1.000	1.000	1.375	5.00	.75	—	.294	2.000	N.4L	**CM73LP**	**S2112**	25 IP
NER164D	1.000	1.000	1.375	6.00	.75	—	.294	2.000	N.4L	**CM73LP**	**S2112**	25 IP
NER204D	1.250	1.250	1.625	6.00	.75	.27	.294	2.000	N.4L	**CM73LP**	**S2112**	25 IP
NER244D	1.500	1.500	2.000	6.00	.75	.65	.294	2.000	N.4L	**CM73LP**	**S2112**	25 IP
NER205D	1.250	1.250	2.000	6.00	1.44	—	.415	2.000	N.5L	**CM81**	**S352**	1/4
NER206D	1.250	1.250	1.625	6.00	.75	.27	.300	2.000	N.6L	**CM121**	**S412**	5/32
left hand												
NEL062	.375	.375	.750	2.50	.50	—	.138	1.000	N.2R	**CM74**	**S310**	7/64
NEL082V	.500	.500	.750	3.50	.50	—	.138	1.000	N.2R	**CM74**	**S310**	7/64
NEL102B	.625	.625	.750	4.50	—	—	.138	1.000	N.2R	**CM74**	**S310**	7/64
NEL122B	.750	.750	1.000	4.50	.50	.29	.138	1.000	N.2R	**CM74**	**S310**	7/64
NEL162C	1.000	1.000	1.250	5.00	.50	.41	.138	1.000	N.2R	**CM74**	**S310**	7/64
NEL123B	.750	.750	1.125	4.50	.75	—	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL163C	1.000	1.000	1.250	5.00	.75	—	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL163D	1.000	1.000	1.250	6.00	.75	—	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL853D	1.250	1.000	1.250	6.00	.75	—	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL203D	1.250	1.250	1.500	6.00	.75	.26	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL243D	1.500	1.500	2.000	6.00	.75	.76	.210	2.000	N.3R	**CM72LP**	**S2112**	25 IP
NEL164C	1.000	1.000	1.375	5.00	.75	—	.294	2.000	N.4R	**CM72LP**	**S2112**	25 IP
NEL164D	1.000	1.000	1.375	6.00	.75	—	.294	2.000	N.4R	**CM72LP**	**S2112**	25 IP
NEL204D	1.250	1.250	1.625	6.00	.75	.27	.294	2.000	N.4R	**CM72LP**	**S2112**	25 IP
NEL244D	1.500	1.500	2.000	6.00	.75	.65	.294	2.000	N.4R	**CM72LP**	**S2112**	25 IP
NEL205D	1.250	1.250	2.000	6.00	1.44	—	.415	2.000	N.5R	**CM80**	**S352**	1/4
NEL206D	1.250	1.250	1.625	6.00	.75	.27	.300	2.000	N.6R	**CM120**	**S412**	5/32

NOTE: F dimension measured over sharp point of N-style threading insert.



The LT — Laydown Threading System

Triangle threading inserts and tools that provide the highest accuracy and quality level for daily production needs.

- LT is the system of choice for fine-pitch threads, high-helix/multistart threads, and single-point threading in small-diameter bores.
- Variable shim angles enable proper cutting geometry for high-helix angle and reverse helix angle threading. This maximizes tool life and improves thread quality.
- Increase productivity by outperforming conventional PVD grades with up to a 30% advantage in cutting speeds.

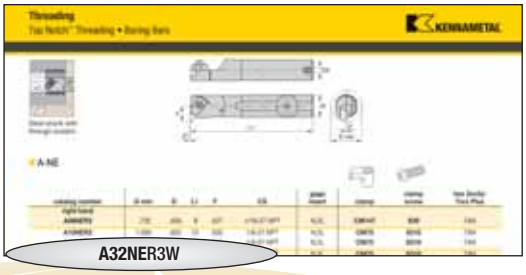
Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

www.kennametal.com

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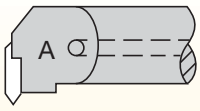
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

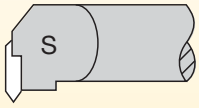


Inch

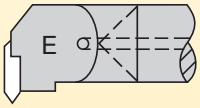
A	32	N	E
Bar Type	Bar Diameter	Insert Holding Method	Insert Location



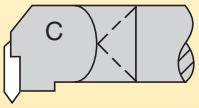
A = Steel with coolant



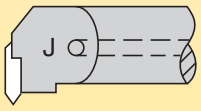
S = Steel without coolant



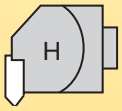
E = Carbide with coolant



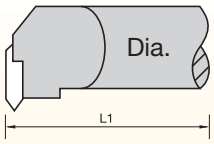
C = Carbide without coolant



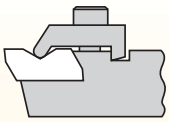
J = Heavy metal with coolant



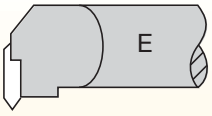
H = Interchangeable head



A two-digit number that increases the bar diameter in 1/16" increments



N* = Top Notch

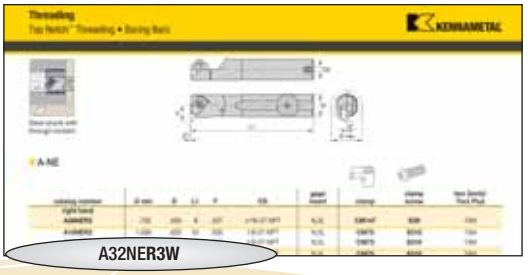


E = End mount

*Kennametal standard only.

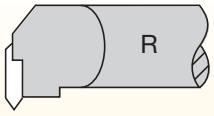
NOTE: Right-hand bars use left-hand inserts and clamps.
Left-hand bars use right-hand inserts and clamps.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

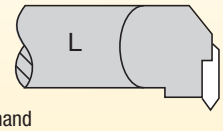


Inch

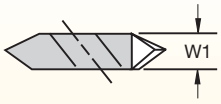
R	3	W
Hand of Bar	Insert Size	Additional Information



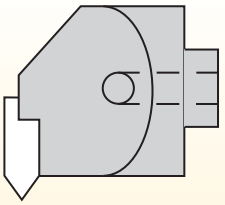
R = Right hand



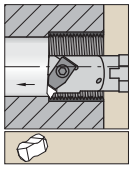
L = Left hand



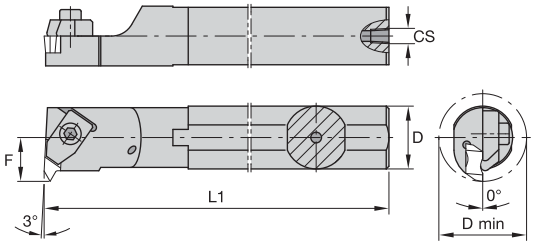
insert size	W1
1	.100"
2	.150"
3	.195"
4	.255"
5	.380"
6	.383"
8	.438"



W = through-coolant interchangeable head



Steel shank with through coolant.

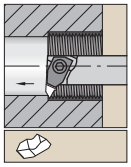


A-NE

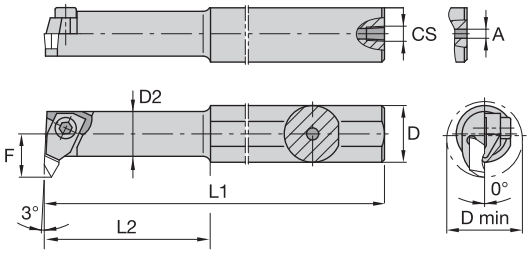



catalog number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
A08NER2	.730	.500	8	.437	1/16-27 NPT	N.2L	**CM147**	**S39**	7/64
A10NER2	1.000	.625	10	.500	1/8-27 NPT	N.2L	**CM75**	**S310**	7/64
A12NER2	1.125	.750	10	.562	1/8-27 NPT	N.2L	**CM75**	**S310**	7/64
A16NER2	1.375	1.000	12	.688	1/4-18 NPT	N.2L	**CM75**	**S310**	7/64
A16NER3	1.375	1.000	12	.688	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A20NER3	1.750	1.250	14	.875	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A24NER3	2.000	1.500	14	1.000	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A28NER3	2.250	1.750	14	1.125	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A32NER3	2.500	2.000	16	1.250	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A40NER3	3.000	2.500	16	1.500	1/4-18 NPT	N.3L	**CM73LP**	**S2112**	25 IP
A28NER4	2.500	1.750	14	1.250	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A32NER4	2.750	2.000	16	1.375	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A40NER4	3.250	2.500	16	1.625	1/4-18 NPT	N.4L	**CM73LP**	**S2112**	25 IP
A32NER5	2.812	2.000	16	1.406	1/4-18 NPT	N.5L	**CM81**	**S352**	1/4
A32NER6	2.750	2.000	16	1.375	1/4-18 NPT	N.6L	**CM121**	**S2112**	5/32
A40NER6	3.250	2.500	16	1.625	1/4-18 NPT	N.6L	**CM121**	**S2112**	5/32
left hand									
A08NEL2	.730	.500	8	.437	1/16-27 NPT	N.2R	**CM146**	**S39**	7/64
A10NEL2	1.000	.625	10	.500	1/8-27 NPT	N.2R	**CM74**	**S310**	7/64
A12NEL2	1.125	.750	10	.562	1/8-27 NPT	N.2R	**CM74**	**S310**	7/64
A16NEL2	1.375	1.000	12	.688	1/4-18 NPT	N.2R	**CM74**	**S310**	7/64
A16NEL3	1.375	1.000	12	.688	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A20NEL3	1.750	1.250	14	.875	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A24NEL3	2.000	1.500	14	1.000	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A28NEL3	2.250	1.750	14	1.125	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A32NEL3	2.500	2.000	16	1.250	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A40NEL3	3.000	2.500	16	1.500	1/4-18 NPT	N.3R	**CM72LP**	**S2112**	25 IP
A28NEL4	2.500	1.750	14	1.250	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A32NEL4	2.750	2.000	16	1.375	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A40NEL4	3.250	2.500	16	1.625	1/4-18 NPT	N.4R	**CM72LP**	**S2112**	25 IP
A32NEL5	2.812	2.000	16	1.406	1/4-18 NPT	N.5R	**CM80**	**S352**	1/4
A32NEL6	2.750	2.000	16	1.375	1/4-18 NPT	N.6R	**CM120**	**S2112**	5/32

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.



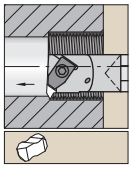
Necked steel shank
with through coolant.



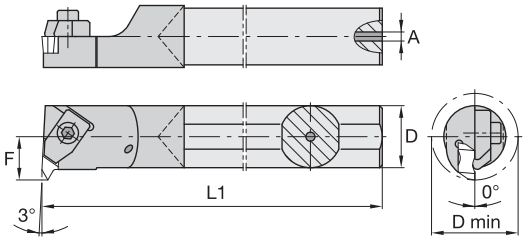
A-NE -1

catalog number	D min	D	D2	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (inch)
right hand												
A06NER1	.440	.375	—	6	1.25	.258	.13	—	N.1L	**CM109**	**S304**	5/64
A08NER1	.440	.500	.310	8	1.29	.258	.09	1/16-27 NPT	N.1L	**CM109**	**S304**	5/64
A10NER1	.800	.625	—	10	—	.406	—	1/8-27 NPT	N.1L	**CM109**	**S304**	5/64

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.



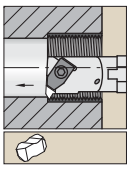
Carbide shank with
through coolant.



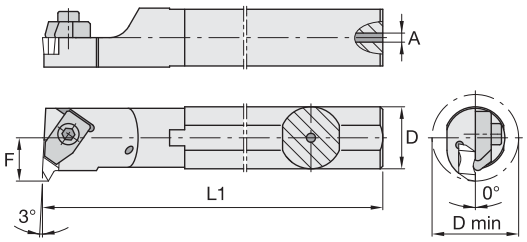
E-NE

catalog number	D min	D	L1	F	A	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
E08NER2	.730	.500	8	.437	.19	N.2L	**CM147**	**S39**	7/64
E10NER2	1.000	.625	10	.500	.22	N.2L	**CM75**	**S310**	7/64
E12NER2	1.125	.750	10	.562	.28	N.2L	**CM75**	**S310**	7/64
E16NER3	1.375	1.000	12	.688	.31	N.3L	**CM73LP**	**S2112**	25 IP
left hand									
E08NEL2	.730	.500	8	.437	.19	N.2R	**CM146**	**S39**	7/64
E10NEL2	1.000	.625	10	.500	.22	N.2R	**CM74**	**S310**	7/64
E12NEL2	1.125	.750	10	.562	.28	N.2R	**CM74**	**S310**	7/64
E16NEL3	1.375	1.000	12	.688	.31	N.3R	**CM72LP**	**S2112**	25 IP

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.



Heavy metal shank
with through coolant.

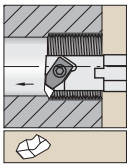


L-NE

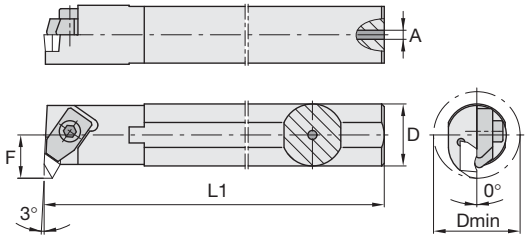



catalog number	D min	D	L1	F	A	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
L08RNER2	.730	.500	8	.432	.16	N.2L	**CM147**	**S39**	7/64
L10RNER2	1.000	.625	8	.495	.16	N.2L	**CM75**	**S310**	7/64
L12RNER2	1.125	.750	8	.557	.16	N.2L	**CM75**	**S310**	7/64
L16SNER2	1.375	1.000	10	.683	.25	N.2L	**CM75**	**S310**	7/64
L16SNER3	1.375	1.000	10	.683	.25	N.3L	**CM73LP**	**S2112**	25 IP
left hand									
L08RNEL2	.730	.500	8	.432	.16	N.2R	**CM146**	**S39**	7/64
L10RNEL2	1.000	.625	8	.495	.16	N.2R	**CM74**	**S310**	7/64
L12RNEL2	1.125	.750	8	.557	.16	N.2R	**CM74**	**S310**	7/64
L16SNEL3	1.375	1.000	10	.683	.25	N.3R	**CM72LP**	**S2112**	25 IP

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.



Heavy metal shank
with through coolant.

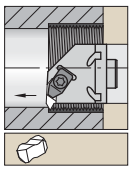


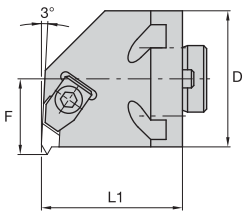
L-NE-S

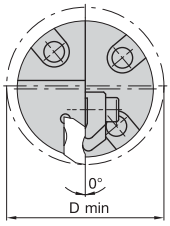



catalog number	D min	D	L1	F	A	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
L05MNER1S	.440	.313	3	.258	.09	N.1L	**CM109**	**S304**	5/64
L06MNER1S	.480	.375	6	.265	.13	N.1L	**CM109**	**S304**	5/64
L08RNER1S	.600	.500	8	.325	.16	N.1L	**CM109**	**S304**	5/64
L08RNER2	.730	.500	8	.432	.16	N.2L	**CM147**	**S39**	7/64
L10RNER2	1.000	.625	8	.495	.16	N.2L	**CM75**	**S310**	7/64
L12RNER2	1.125	.750	8	.557	.16	N.2L	**CM75**	**S310**	7/64
L16SNER2	1.375	1.000	10	.683	.25	N.2L	**CM75**	**S310**	7/64
L16SNER3	1.375	1.000	10	.683	.25	N.3L	**CM73LP**	**S2112**	25 IP
left hand									
L08RNEL2	.730	.500	8	.432	.16	N.2R	**CM146**	**S39**	7/64
L10RNEL2	1.000	.625	8	.495	.16	N.2R	**CM74**	**S310**	7/64
L12RNEL2	1.125	.750	8	.557	.16	N.2R	**CM74**	**S310**	7/64
L16SNEL3	1.375	1.000	10	.683	.25	N.3R	**CM72LP**	**S2112**	25 IP

NOTE: Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.







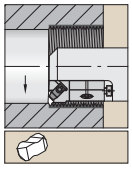
H-NE

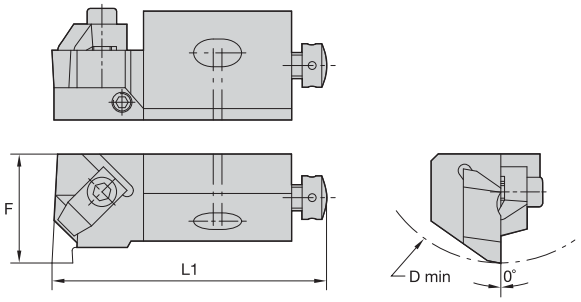





catalog number	D min	D	F	L1	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)/ Torx Plus
right hand											
H20NER3W	1.750	1.250	.875	1.625	N.3L	–	–	–	**CM73LP**	**S2112**	25 IP
H24NER3W	2.000	1.500	1.000	1.625	N.3L	–	–	–	**CM73LP**	**S2112**	25 IP
H28NER3W	2.250	1.750	1.125	1.625	N.3L	–	–	–	**CM73LP**	**S2112**	25 IP
H32NER3W	2.500	2.000	1.250	1.625	N.3L	–	–	–	**CM73LP**	**S2112**	25 IP
H40NER3W	3.000	2.500	1.500	1.625	N.3L	–	–	–	**CM73LP**	**S2112**	25 IP
H28NER4W	2.500	1.750	1.250	1.625	N.4L	–	–	–	**CM73LP**	**S2112**	25 IP
H32NER4W	2.750	2.000	1.375	1.625	N.4L	–	–	–	**CM73LP**	**S2112**	25 IP
H36NER4W	3.000	2.250	1.500	1.625	N.4L	–	–	–	**CM73LP**	**S2112**	25 IP
H40NER4W	3.250	2.500	1.625	1.625	N.4L	–	–	–	**CM73LP**	**S2112**	25 IP
H28NER6W	2.500	1.750	1.250	1.625	N.6L	–	–	–	**CM121**	**S412**	5/32
H32NER6W	2.750	2.000	1.375	1.625	N.6L	–	–	–	**CM121**	**S412**	5/32
H40NER6W	3.250	2.500	1.625	1.625	N.6L	–	–	–	**CM121**	**S412**	5/32
H24NER8W	2.000	1.500	1.000	1.625	N.8L	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
H32NER8W	2.500	2.000	1.250	1.625	N.8L	**SM427**	**S111**	1/16	**CM145**	**S422**	3/16
left hand											
H20NEL3W	1.750	1.250	.875	1.625	N.3R	–	–	–	**CM72LP**	**S2112**	25 IP
H24NEL3W	2.000	1.500	1.000	1.625	N.3R	–	–	–	**CM72LP**	**S2112**	25 IP
H28NEL3W	2.250	1.750	1.125	1.625	N.3R	–	–	–	**CM72LP**	**S2112**	25 IP
H32NEL3W	2.500	2.000	1.250	1.625	N.3R	–	–	–	**CM72LP**	**S2112**	25 IP
H40NEL3W	3.000	2.500	1.500	1.625	N.3R	–	–	–	**CM72LP**	**S2112**	25 IP
H28NEL4W	2.500	1.750	1.250	1.625	N.4R	–	–	–	**CM72LP**	**S2112**	25 IP
H32NEL4W	2.750	2.000	1.375	1.625	N.4R	–	–	–	**CM72LP**	**S2112**	25 IP
H36NEL4W	3.000	2.250	1.500	1.625	N.4R	–	–	–	**CM72LP**	**S2112**	25 IP
H40NEL4W	3.250	2.500	1.625	1.625	N.4R	–	–	–	**CM72LP**	**S2112**	25 IP
H28NEL6W	2.500	1.750	1.250	1.625	N.6R	–	–	–	**CM120**	**S412**	5/32
H32NEL6W	2.750	2.000	1.375	1.625	N.6R	–	–	–	**CM120**	**S412**	5/32
H40NEL6W	3.250	2.500	1.625	1.625	N.6R	–	–	–	**CM120**	**S412**	5/32

NOTE: For boring adapters, see pages C119–C121.
Minimum bore diameter (D min) capability varies with thread type and pitch. See page E96 for details.
F dimension measured over sharp point of N-style threading insert.





NE-CA

catalog number	D min	F	L1	gage insert
right hand				
NER12CA2	1.969	.787	2.19	N.2L
NER20CA2	2.756	.984	2.76	N.2L
NER25CA3	3.937	1.260	3.94	N.3L
NER25CA4	3.937	1.260	3.94	N.4L
left hand				
NEL12CA2	1.969	.787	2.17	N.2R
NEL25CA3	3.937	1.260	3.94	N.3R

Spare Parts

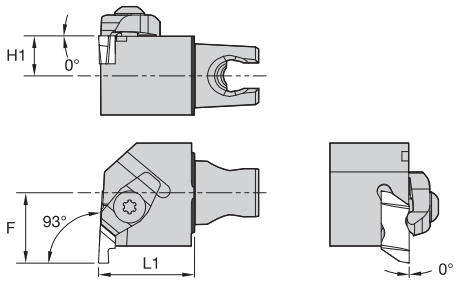






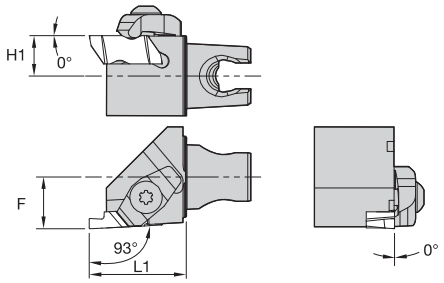

D min	clamp	clamp screw	hex (mm)	radial adjusting screw	hex (mm)	axial screw	hex (mm)	hold down screw	hex (mm)	washer
1.969	**CM75**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	2.5 mm	**191.406**	4 mm	**CSWM 060 050**
2.756	**CM75**	**MS1025**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	2.5 mm	**191.407**	5 mm	**CSWM 080 050**
3.937	**CM73LP**	**MS412**	4 mm	**KUAM27**	4 mm	**KUAM33**	4 mm	**—**	6 mm	**CSWM 100 080**
3.937	**CM73LP**	**MS412**	4 mm	**KUAM27**	4 mm	**KUAM33**	4 mm	**—**	6 mm	**CSWM 100 080**
1.969	**CM74**	**MS1025**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	2.5 mm	**191.406**	4 mm	**CSWM 060 050**
3.937	**CM72LP**	**MS412**	4 mm	**KUAM26**	4 mm	**KUAM33**	4 mm	**—**	6 mm	**CSWM 100 080**

NOTE: Minimum bore capability varies with depth of groove. See page E97 for details.



NE 93°

order number	catalog number	L1 mm	L1 in	F mm	F in	H1 mm	H1 in	gage insert	clamp	clamp screw
	right hand									
3483036	**KM20NER225**	25	.984	17	.669	9,5	.375	NG2L	**CM75**	**MS1200**
3483034	**KM20NER325**	25	.984	17	.669	9,5	.375	NG3L	**CM73LP**	**–**
2399462	**KM25NER230**	30	1.181	22	.866	12,5	.492	NG2L	**CM75**	**MS1200**
2399494	**KM25NER330**	30	1.181	22	.866	12,5	.492	NG3L	**CM73LP**	**–**
2399496	**KM25NER430**	30	1.181	24	.945	12,5	.492	NG4L	**CM73LP**	**–**
	left hand									
3483035	**KM20NEL225**	25	.984	17	.669	9,5	.375	NG2R	**CM74**	**MS1200**
3483033	**KM20NEL325**	25	.984	17	.669	9,5	.375	NG3R	**CM72LP**	**–**
2399493	**KM25NEL230**	30	1.181	22	.866	12,5	.492	NG2R	**CM74**	**MS1200**
2399495	**KM25NEL330**	30	1.181	22	.866	12,5	.492	NG3R	**CM72LP**	**–**
2399497	**KM25NEL430**	30	1.181	24	.945	12,5	.492	NG4R	**CM72LP**	**–**



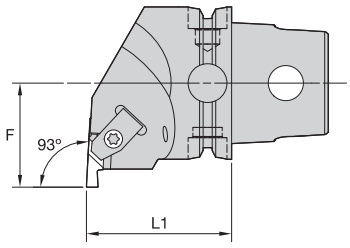
NS 93°

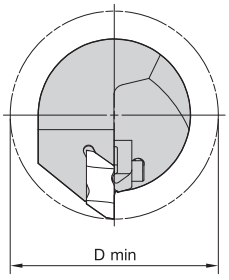
order number	catalog number	L1 mm	L1 in	F mm	F in	H1 mm	H1 in	gage insert	clamp	clamp screw
	right hand									
3483030	**KM20NSR230**	30	1.181	12,50	.492	9,5	.375	NG2R	**CM74**	**MS1200**
3483028	**KM20NSR330**	30	1.181	12,50	.492	9,5	.375	NG3R	**CM72LP**	**MS524**
2399498	**KM25NSR230**	30	1.181	16,00	.630	12,5	.492	NG2R	**CM74**	**MS1200**
2399500	**KM25NSR330**	30	1.181	16,00	.630	12,5	.492	NG3R	**CM72LP**	**MS2111**
2399502	**KM25NSR430**	30	1.181	16,00	.630	12,5	.492	NG4R	**CM212LP**	**MS2111**
	left hand									
3483029	**KM20NSL230**	30	1.181	12,50	.492	9,5	.375	NG2L	**CM75**	**MS1200**
3483027	**KM20NSL330**	30	1.181	12,50	.492	9,5	.375	NG3L	**CM73LP**	**MS524**
2399499	**KM25NSL230**	30	1.181	16,00	.630	12,5	.492	NG2L	**CM75**	**MS1200**
2399501	**KM25NSL330**	30	1.181	16,00	.630	12,5	.492	NG3L	**CM73LP**	**MS2111**
2399503	**KM25NSL430**	30	1.181	16,00	.630	12,5	.492	NG4L	**CM213LP**	**MS2111**



KM QUICK CHANGE

NE 93°





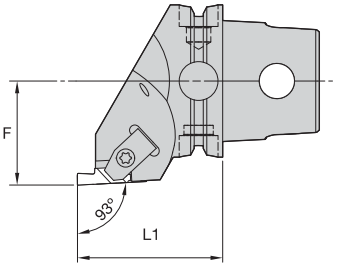


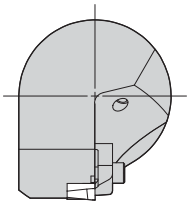
order number	catalog number	L1 mm	L1 in	F mm	F in	D min mm	D min in	gage insert	clamp	clamp screw	kg	lbs
	right hand											
3902285	KM40TSNER2	40	1.575	27	1.063	54	2.126	NG2L	CM75	MS1488	0,31	.68
3902286	KM40TSNER3	40	1.575	27	1.063	54	2.126	NG3L	CM73	MS1489	0,30	.67
3902287	KM40TSNER4	40	1.575	27	1.063	54	2.126	NG4L	CM73	MS1489	0,30	.66
	left hand											
3902132	KM40TSNEL2	40	1.575	27	1.063	54	2.126	NG2R	CM74	MS1488	0,31	.68
3902283	KM40TSNEL3	40	1.575	27	1.063	54	2.126	NG3R	CM72	MS1489	0,31	.67
3902284	KM40TSNEL4	40	1.575	27	1.063	54	2.126	NG4R	CM72	MS1489	0,30	.66



KM QUICK CHANGE

NS 93°





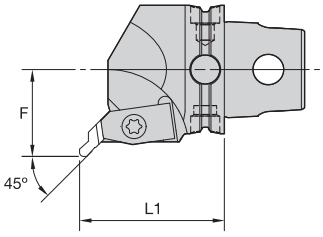


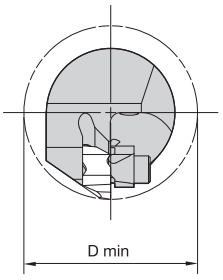
order number	catalog number	L1 mm	L1 in	F mm	F in	gage insert	clamp	clamp screw	kg	lbs
	right hand									
3902293	KM40TSNSR2	40	1.575	27	1.063	NG2R	CM74	MS1488	0,32	.70
3902294	KM40TSNSR3	47	1.850	27	1.063	NG3R	CM72	MS1489	0,32	.71
3902295	KM40TSNSR4	47	1.850	27	1.063	NG4R	CM72	MS1489	0,31	.68
	left hand									
3902290	KM40TSNSL2	40	1.575	27	1.063	NG2L	CM75	MS1488	0,32	.70
3902291	KM40TSNSL3	47	1.850	27	1.063	NG3L	CM73	MS1489	0,33	.72
3902292	KM40TSNSL4	47	1.850	27	1.063	NG4L	CM73	MS1489	0,31	.68

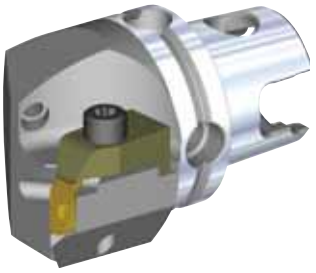


KM QUICK CHANGE

■ NR 45°







order number	catalog number	L1 mm	L1 in	F mm	F in	D min mm	D min in	gage insert	clamp	clamping screw	kg	lbs
	right hand											
3902289	**KM40TSNRR3045M**	45	1.772	27	1.063	54	2.126	NU3L	**CM73**	**MS1489**	0,34	.75
	left hand											
3902288	**KM40TSNRL3045M**	45	1.772	27	1.063	54	2.126	NU3R	**CM72**	**MS1489**	0,33	.74



LT • Laydown Triangle Threading

Primary Application

LT Laydown triangle threading is the system of choice for fine-pitch threads, high-helix/multistart threads, and single-point threading in small-diameter bores. With a wide selection of CB-style chip control inserts, you will receive superior chip management for excellent surface finishes and minimal operator intervention. The low-profile design enables unrestricted chip flow — ideal for I.D. threads, and variable shim angles enable proper cutting geometry for high-helix angle and reverse helix angle threading, maximizing tool life and improving thread quality.

Features and Benefits

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™ and 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.

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.



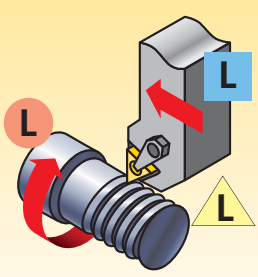
Step 1 • Select threading method and hand of tooling

Required Information:

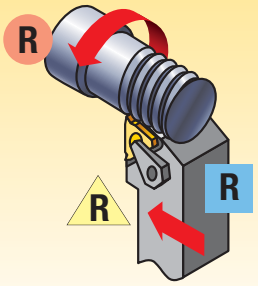
- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.



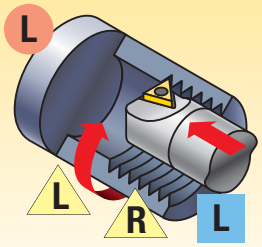
Feed Direction Toward the Chuck • Standard Helix



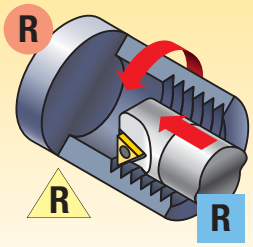
external left-hand thread



external right-hand thread

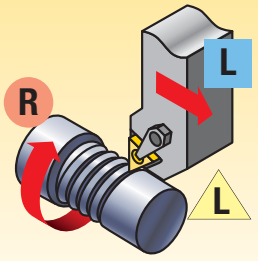


internal left-hand thread

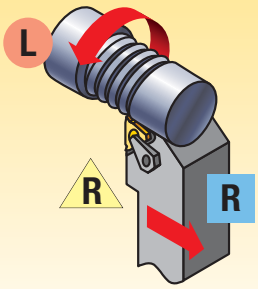


internal right-hand thread

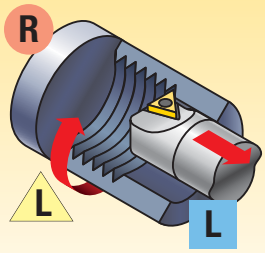
Feed Direction Away from the Chuck • Reverse Helix



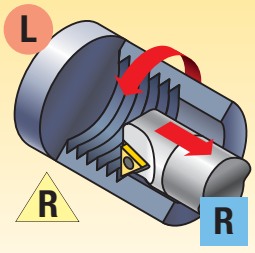
external right-hand thread



external left-hand thread



internal right-hand thread



internal left-hand thread

Step 2 • Select threading method and hand of tooling

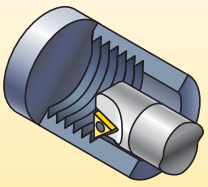
Required Information:

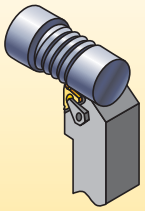
- External/internal operation.
- Minimum bore diameter (for internal operations).
- Hand of tool.
- Insert size (gage insert).

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

catalog number	gage insert	minimum bore diameter	shim
S1212LSER3	LT16NR	.90"	SM-YI3
A2020LSER16	LT16NR	16mm	SM-YI3

Select the Appropriate Holder for the Insert Size and Hand:

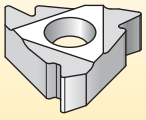




Step 3 • Choose insert for application

- 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.

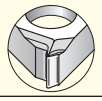
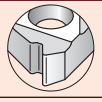
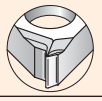
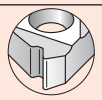
NOTE: See Threading Insert Overview on page E45.



insert size	catalog number	TN6025
11	LT11NRA60	●
16	LT6NRAG60	●

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • SFM (m/min)

	workpiece material	P	M	K	N	S
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)

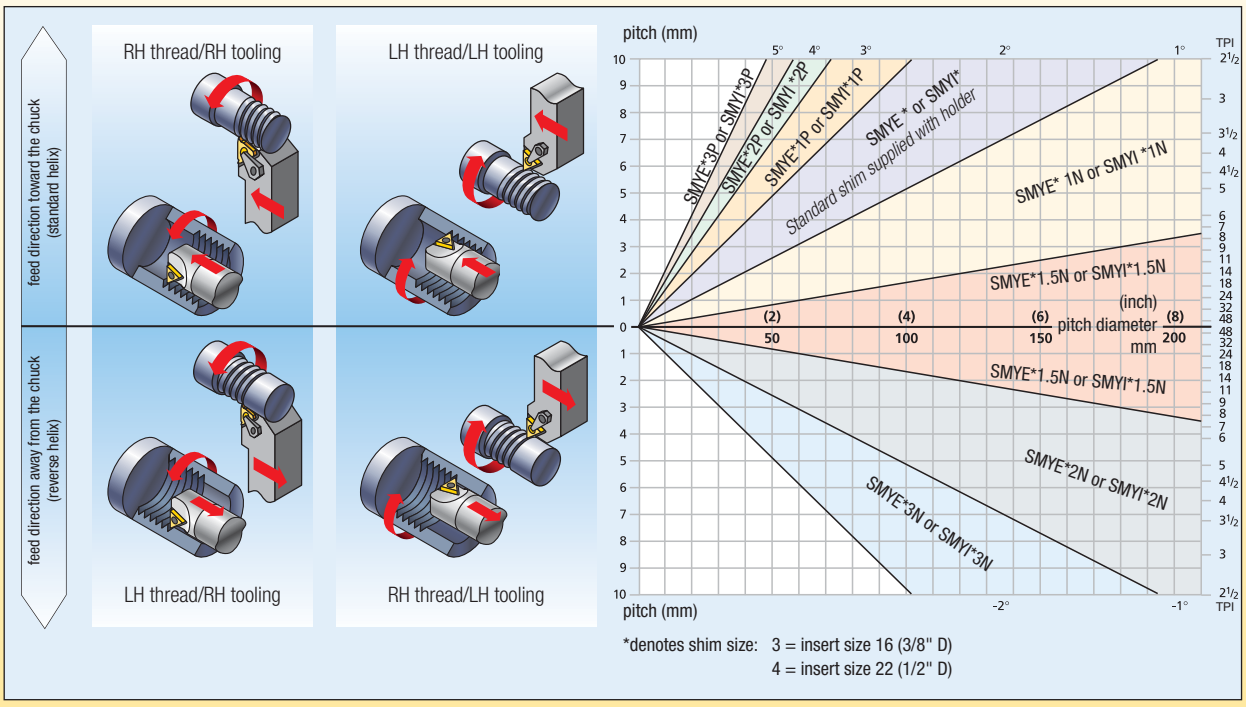
NOTE: CB-style chip control inserts are not available with some thread forms.
In those cases, flat top inserts can be substituted.

Step 5 • 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

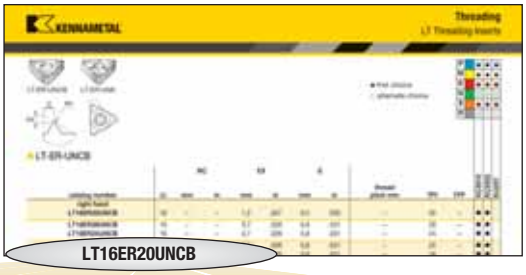


*denotes shim size: 3 = insert size 16 (3/8" D)
4 = insert size 22 (1/2" D)

NOTE: If recommended shim is different from shim supplied with toolholder, order shim separately.
Optimize your threading operation by using the proper infeed angle and the recommended infeed values.
See the Technical Section on pages E85–E87.
Also see detailed shim selection information on pages E105–E107.

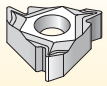
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



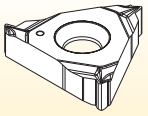
Inch

LT	16	ER	20	UN	CB
Type of Insert	Cutting Edge Length (Size)	Hand of Insert	Thread Pitch	Thread Profile	Chip Control



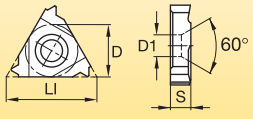
LT = Laydown triangle threading

ER = External right hand
EL = External left hand
NR = Internal right hand
NL = Internal left hand



□ = Flat top
CB = Chipbreaker
K = Kenna Universal™ chipbreaker

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



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

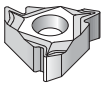
partial profile		
designation	**thread pitch (mm)**	**TPI**
A	0,50–1,5	48–16
AG	0,50–3,0	48–8
G	1,75–3,0	14–8
N	3,50–5,0	7–5
full profile		
actual TPI or pitch in mm is designated	0,5–4,0	48–8

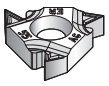


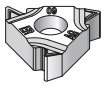
The Kennametal LT Advantage

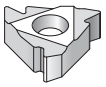
Every box of 10 inserts includes a free Torx wrench and spare locking screw, except LT-K inserts.

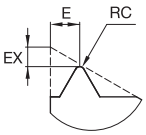
style			thread profile	standard	tolerance class	cresting	application	page(s)
CB	K	flat top						
 LT-60CB	 LT-60K	 LT-60	Partial Profile 60°	—	—	N	General use for 60° thread forms such as ISO and UN where non-cresting inserts are desired to cut a variety of pitches	E46
 LT-ISOCB	 LT-ISOK	 LT-ISO	Metric ISO	ISO R262, DIN 13	6g / 6H	Y	Widely used metric 60° V-form for all industries	E49–E51
 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	E52–E53
		 LT-UNJ	UNJ	MIL-S-8879C	3A / 3B	Y	Controlled root radius on external threads for military and aerospace industries, 60° thread form	E55
 LT-NPTCB		 LT-NPT	NPT	USAS B2.1:1968	Standard NPT	Y	National Pipe thread standard 60° thread form for pipe fittings	E56
 LT- NPTFCB		 LT-NPTF	NPTF	ANSI B1.20.3-1976	Class 2	Y	Dryseal-type NPT 60° thread form for pipe fittings	E57
	 LT-55K	 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	E46, E58
		 LT-BSPT	BSPT	BS 21:1985	Standard BSPT	Y	55° form for pipe fittings	E61
 LT-WCB	 LT-WK	 LT-W	Whitworth, BSW, BSF, BSP	BS 84:1956, ISO 228/1:1982, DIN 259	Medium Class A	Y	Widely used 55° form for gas and water connections	E59–E60
		 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	E62
		 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	E63–E64
		 LT-BUT	API Buttress Casing	API SPEC. 7:1990	Standard API	Y	45° buttress-style form used for pipe casing connections in the oil and gas industry	E63
		 LT-ACME	Acme	ANSI B1.5:1988	3G	N	29° truncated thread form for motion applications in a wide variety of industries	E64–E65
		 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	E65–E66
		 LT-RD	Round	DIN 405	7h / 7H	Y	Round thread form for tube fittings in the chemical and food industries	E67
		 LT-TR	Trapez	DIN 103	7e / 7H	N	30° truncated metric thread form for motion applications	E66


LT-ER-60CB


LT-ER-55K


LT-ER-60K


LT-ER/L-60





● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER-60CB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ERAG60CB	16	0,08	.003	0,9	.035	1,5	.059	0,50-3,0	48-8	–	●	●	

LT-ER-55K

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ERAG55K	16	0,07	.003	1,2	.047	1,7	.067	0,50-3,0	48-8	–			●

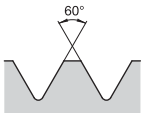
LT-ER-60K

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ERAG60K	16	0,08	.003	1,2	.047	1,7	.067	0,50-3,0	48-8	–			●
LT16ERG60K	16	0,18	.007	1,2	.047	1,7	.067	1,75-3,0	14-8	–			●

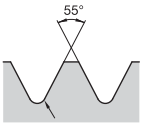
LT-ER/L-60

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ERA60	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–	●	●	
LT16ERAG60	16	0,08	.003	1,2	.047	1,7	.067	0,50-3,0	48-8	–	●	●	
LT16ERG60	16	0,28	.011	1,2	.047	1,7	.067	1,75-3,0	14-8	–	●	●	
LT22ERN60	22	0,53	.021	1,7	.067	2,5	.098	3,5-5,0	7-5	–		●	
left hand													
LT16ELA60	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–		●	
LT16ELAG60	16	0,08	.003	1,2	.047	1,7	.067	0,50-3,0	48-8	–		●	
LT16ELG60	16	0,28	.011	1,2	.047	1,7	.067	1,75-3,0	14-8	–		●	
LT22ELN60	22	0,53	.021	1,7	.067	2,5	.098	3,5-5,0	7-5	–		●	

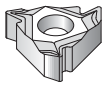
Thread Forms

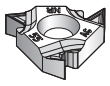


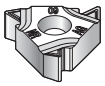
Partial Profile
60° External

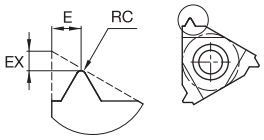


Partial Profile
55° External


LT-NR-60CB


LT-NR-55K


LT-NR-60K



● first choice
○ alternate choice

		KC5010	KC5025	KU25T
P		●	●	●
M		●	●	●
K		●	●	●
N		○	○	○
S		●	●	●
H		○		

LT-NR-60CB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NRA60CB	11	0,05	.002	0,6	.024	0,8	.031	0,50-1,5	48-16	–		●	
LT16NRAG60CB	16	0,05	.002	0,9	.035	1,5	.059	0,50-3,0	48-8	–		●	
LT16NRG60CB	16	0,16	.006	1,0	.039	1,5	.059	1,75-3,0	14-8	–		●	

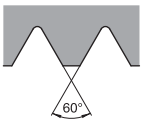
LT-NR-55K

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NRAG55K	16	0,07	.003	1,2	.047	1,7	.067	0,50-3,0	48-8	–			●

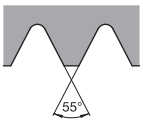
LT-NR-60K

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NRA60K	11	0,03	.001	0,8	.031	0,9	.035	0,50-1,5	48-16	–			●
LT16NRAG60K	16	0,04	.002	1,2	.047	1,7	.067	0,50-3,0	48-8	–			●
LT16NRG60K	16	0,08	.003	1,2	.047	1,7	.067	1,75-3,0	14-8	–			●

Thread Forms

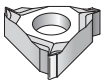


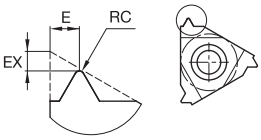
Partial Profile
60° Internal



Partial Profile
55° Internal


LT-NR/L-60


LT-ER-ISOCB



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

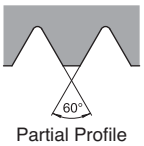
LT-NR/L-60

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NRA60	11	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–	●	●	
LT16NRA60	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–	●	●	
LT16NRAG60	16	0,05	.002	1,2	.047	1,7	.067	0,50-3,0	48-8	–	●	●	
LT16NRG60	16	0,15	.006	1,2	.047	1,7	.067	1,75-3,0	14-8	–	●	●	
LT22NRN60	22	0,31	.012	1,7	.067	2,5	.098	3,5-5,0	7-5	–		●	
left hand													
LT11NLA60	11	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–		●	
LT16NLA60	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,5	48-16	–		●	
LT16NLAG60	16	0,05	.002	1,2	.047	1,7	.067	0,50-3,0	48-8	–		●	
LT16NLG60	16	0,15	.006	1,2	.047	1,7	.067	1,75-3,0	14-8	–		●	
LT22NLN60	22	0,31	.012	1,7	.067	2,5	.098	3,5-5,0	7-5	–		●	

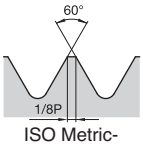
LT-ER-ISOCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT16ER05ISOCB	16	–	–	1,2	.047	0,5	.020	0,50	–	–	●	●	
LT16ER075ISOCB	16	–	–	1,2	.047	0,6	.024	0,75	–	–	●	●	
LT16ER10ISOCB	16	–	–	0,7	.028	0,8	.031	1,0	–	–	●	●	
LT16ER125ISOCB	16	–	–	0,7	.028	0,8	.031	1,25	–	–	●	●	
LT16ER15ISOCB	16	–	–	0,7	.028	0,8	.031	1,5	–	–	●	●	
LT16ER175ISOCB	16	–	–	1,2	.047	1,5	.059	1,75	–	–	●	●	
LT16ER20ISOCB	16	–	–	1,2	.047	1,5	.059	2,0	–	–	●	●	
LT16ER25ISOCB	16	–	–	1,2	.047	1,5	.059	2,5	–	–		●	
LT16ER30ISOCB	16	–	–	1,3	.051	1,5	.059	3,0	–	–	●	●	

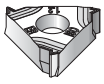
Thread Forms

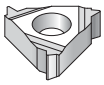


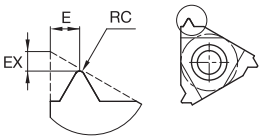
Partial Profile
60° Internal



ISO Metric-
External


LT-ER-ISOK


LT-ER/L-ISO



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

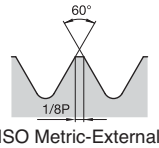
LT-ER-ISOK

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER10ISOK	16	0,14	.005	0,7	.028	0,7	.028	1,0	–	–			●
LT16ER125ISOK	16	0,16	.006	1,1	.043	0,8	.031	1,25	–	–			●
LT16ER15ISOK	16	0,20	.008	0,8	.031	1,0	.039	1,5	–	–			●
LT16ER175ISOK	16	0,22	.009	1,2	.047	1,5	.059	1,75	–	–			●
LT16ER20ISOK	16	0,27	.011	1,0	.039	1,3	.051	2,0	–	–			●
LT16ER25ISOK	16	0,32	.013	1,2	.047	1,5	.059	2,5	–	–			●
LT16ER30ISOK	16	0,38	.015	1,3	.051	1,5	.059	3,0	–	–			●

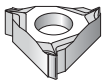
LT-ER/L-ISO

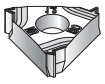
catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT16ER05ISO	16	–	–	0,6	.024	0,4	.016	0,50	–	–		●	
LT16ER075ISO	16	–	–	0,6	.024	0,6	.024	0,75	–	–		●	
LT16ER10ISO	16	–	–	0,7	.027	0,7	.027	1,0	–	–	●	●	
LT16ER125ISO	16	–	–	0,8	.031	0,9	.035	1,25	–	–	●	●	
LT16ER15ISO	16	–	–	0,8	.031	1,0	.039	1,5	–	–	●	●	
LT16ER175ISO	16	–	–	0,9	.035	1,2	.047	1,75	–	–	●	●	
LT16ER20ISO	16	–	–	1,0	.039	1,3	.051	2,0	–	–	●	●	
LT16ER25ISO	16	–	–	1,1	.043	1,5	.059	2,5	–	–	●	●	
LT16ER30ISO	16	–	–	1,2	.047	1,6	.063	3,0	–	–	●	●	
LT22ER35ISO	22	–	–	1,6	.063	2,3	.090	3,5	–	–		●	
LT22ER40ISO	22	–	–	1,6	.063	2,3	.090	4,0	–	–		●	
LT22ER45ISO	22	–	–	1,7	.067	2,4	.094	4,5	–	–		●	
LT22ER50ISO	22	–	–	1,7	.067	2,5	.098	5,0	–	–		●	
left hand													
LT16EL05ISO	16	–	–	0,6	.024	0,4	.016	0,50	–	–		●	
LT16EL075ISO	16	–	–	0,6	.024	0,6	.024	0,75	–	–		●	
LT16EL10ISO	16	–	–	0,7	.027	0,7	.027	1,0	–	–		●	
LT16EL125ISO	16	–	–	0,8	.031	0,9	.035	1,25	–	–		●	
LT16EL15ISO	16	–	–	0,8	.031	1,0	.039	1,5	–	–	●	●	
LT16EL175ISO	16	–	–	0,9	.035	1,2	.047	1,75	–	–		●	
LT16EL20ISO	16	–	–	1,0	.039	1,3	.051	2,0	–	–		●	
LT16EL25ISO	16	–	–	1,1	.043	1,5	.059	2,5	–	–		●	
LT16EL30ISO	16	–	–	1,2	.047	1,6	.063	3,0	–	–		●	
LT22EL35ISO	22	–	–	1,6	.063	2,3	.090	3,5	–	–		●	

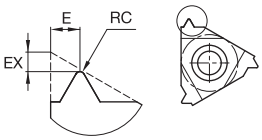
Thread Forms



ISO Metric-External


LT-NR-ISOCB


LT-NR-ISOK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

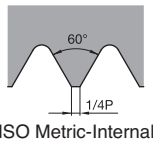
LT-NR-ISOCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR075ISOCB	11	–	–	1,194	.0	0,500	.0	0,75	–	–		●	
LT11NR10ISOCB	11	–	–	0,711	.0	0,787	.0	1,0	–	–		●	
LT16NR10ISOCB	16	–	–	0,711	.0	0,787	.0	1,0	–	–		●	
LT11NR125ISOCB	11	–	–	0,711	.0	0,787	.0	1,25	–	–		●	
LT11NR15ISOCB	11	–	–	0,711	.0	0,787	.0	1,5	–	–		●	
LT16NR15ISOCB	16	–	–	0,711	.0	0,787	.0	1,5	–	–		●	
LT16NR20ISOCB	16	–	–	1,100	.0	1,499	.1	2,0	–	–		●	
LT16NR25ISOCB	16	–	–	1,100	.0	1,499	.1	2,5	–	–		●	

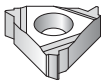
LT-NR-ISOK

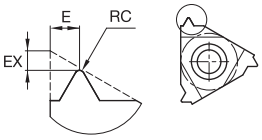
catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR10ISOK	11	0,06	.002	0,7	.028	0,8	.031	1,0	–	–			●
LT16NR10ISOK	16	0,05	.002	0,7	.028	0,7	.028	1,0	–	–			●
LT16NR15ISOK	16	0,08	.003	0,8	.031	1,0	.039	1,5	–	–			●
LT16NR175ISOK	16	0,10	.004	1,2	.047	1,5	.059	1,75	–	–			●
LT16NR20ISOK	16	0,10	.004	1,0	.039	1,3	.051	2,0	–	–			●
LT16NR25ISOK	16	0,14	.005	1,2	.047	1,5	.059	2,5	–	–			●
LT16NR30ISOK	16	0,17	.007	1,3	.051	1,5	.059	3,0	–	–			●

Thread Forms



ISO Metric-Internal





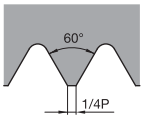
● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

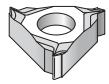
LT-NR/L-ISO

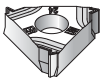
catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR05ISO	11	–	–	0,6	.024	0,4	.016	0,50	–	–		●	
LT16NR05ISO	16	–	–	0,6	.024	0,4	.016	0,50	–	–		●	
LT11NR075ISO	11	–	–	0,6	.024	0,6	.024	0,75	–	–		●	
LT16NR075ISO	16	–	–	0,6	.024	0,6	.024	0,75	–	–		●	
LT11NR10ISO	11	–	–	0,6	.024	0,7	.027	1,0	–	–		●	
LT16NR10ISO	16	–	–	0,6	.024	0,7	.027	1,0	–	–	●	●	
LT11NR125ISO	11	–	–	0,8	.031	0,9	.035	1,25	–	–		●	
LT16NR125ISO	16	–	–	0,8	.031	0,9	.035	1,25	–	–		●	
LT11NR15ISO	11	–	–	0,8	.031	1,0	.039	1,5	–	–	●	●	
LT16NR15ISO	16	–	–	0,8	.031	1,0	.039	1,5	–	–	●	●	
LT11NR175ISO	11	–	–	0,9	.035	1,1	.043	1,75	–	–		●	
LT16NR175ISO	16	–	–	0,9	.035	1,2	.047	1,75	–	–		●	
LT11NR20ISO	11	–	–	0,9	.035	1,1	.043	2,0	–	–		●	
LT16NR20ISO	16	–	–	1,0	.039	1,3	.051	2,0	–	–	●	●	
LT16NR25ISO	16	–	–	1,1	.043	1,5	.059	2,5	–	–		●	
LT16NR30ISO	16	–	–	1,1	.043	1,5	.059	3,0	–	–	●	●	
LT22NR35ISO	22	–	–	1,6	.063	2,3	.090	3,5	–	–		●	
LT22NR40ISO	22	–	–	1,6	.063	2,3	.090	4,0	–	–		●	
LT22NR45ISO	22	–	–	1,6	.063	2,4	.094	4,5	–	–		●	
LT22NR50ISO	22	–	–	1,6	.063	2,3	.090	5,0	–	–		●	
left hand													
LT11NL10ISO	11	–	–	0,6	.024	0,7	.027	1,0	–	–		●	
LT16NL10ISO	16	–	–	0,6	.024	0,7	.027	1,0	–	–		●	
LT11NL15ISO	11	–	–	0,8	.031	1,0	.039	1,5	–	–		●	
LT16NL15ISO	16	–	–	0,8	.031	1,0	.039	1,5	–	–		●	
LT16NL20ISO	16	–	–	1,0	.039	1,3	.051	2,0	–	–		●	
LT16NL25ISO	16	–	–	1,1	.043	1,5	.059	2,5	–	–		●	
LT16NL30ISO	16	–	–	1,1	.043	1,5	.059	3,0	–	–		●	
LT22NL40ISO	22	–	–	1,6	.063	2,3	.090	4,0	–	–		●	

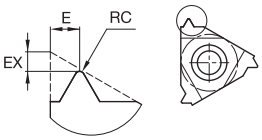
Thread Forms



ISO Metric-Internal


LT-ER-UNCB


LT-ER-UNK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

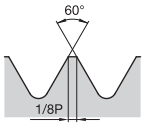
LT-ER-UNCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER32UNCB	16	–	–	1,2	.047	0,5	.020	–	32	–	●	●	
LT16ER28UNCB	16	–	–	0,7	.028	0,8	.031	–	28	–	●	●	
LT16ER24UNCB	16	–	–	0,7	.028	0,8	.031	–	24	–	●	●	
LT16ER20UNCB	16	–	–	0,7	.028	0,8	.031	–	20	–	●	●	
LT16ER18UNCB	16	–	–	0,7	.028	0,8	.031	–	18	–	●	●	
LT16ER16UNCB	16	–	–	0,8	.032	0,8	.031	–	16	–	●	●	
LT16ER14UNCB	16	–	–	1,2	.047	1,5	.059	–	14	–	●	●	
LT16ER12UNCB	16	–	–	1,2	.047	1,5	.059	–	12	–	●	●	
LT16ER10UNCB	16	–	–	1,2	.047	1,5	.059	–	10	–		●	
LT16ER8UNCB	16	–	–	1,3	.051	1,5	.059	–	8	–	●	●	

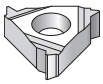
LT-ER-UNK

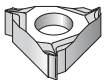
catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT16ER24UNK	16	0,14	.005	0,7	.028	0,8	.031	–	24	–			●
LT16ER20UNK	16	0,16	.006	0,7	.028	0,8	.031	–	20	–			●
LT16ER18UNK	16	0,18	.007	0,7	.028	0,8	.031	–	18	–			●
LT16ER16UNK	16	0,19	.008	0,9	.035	1,1	.043	–	16	–			●
LT16ER14UNK	16	0,23	.009	1,2	.047	1,5	.059	–	14	–			●
LT16ER12UNK	16	0,25	.010	1,1	.043	1,4	.055	–	12	–			●
LT16ER8UNK	16	0,40	.016	1,3	.051	1,5	.059	–	8	–			●

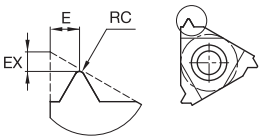
Thread Forms



American
UN-External


LT-ER/L-UN


LT-NR-UNCB



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

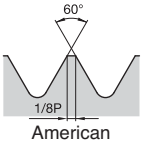
LT-ER/L-UN

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER48UN	16	–	–	0,6	.024	0,6	.024	–	48	–		●	
LT16ER40UN	16	–	–	0,6	.024	0,6	.024	–	40	–		●	
LT16ER36UN	16	–	–	0,6	.024	0,6	.024	–	36	–		●	
LT16ER32UN	16	–	–	0,6	.024	0,6	.024	–	32	–	●	●	
LT16ER28UN	16	–	–	0,6	.024	0,7	.027	–	28	–	●	●	
LT16ER24UN	16	–	–	0,7	.027	0,8	.031	–	24	–	●	●	
LT16ER20UN	16	–	–	0,8	.031	0,9	.035	–	20	–	●	●	
LT16ER18UN	16	–	–	0,8	.031	1,0	.039	–	18	–	●	●	
LT16ER16UN	16	–	–	0,9	.035	1,1	.043	–	16	–	●	●	
LT16ER14UN	16	–	–	1,0	.039	1,2	.047	–	14	–	●	●	
LT16ER12UN	16	–	–	1,1	.043	1,4	.055	–	12	–	●	●	
LT16ER10UN	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16ER8UN	16	–	–	1,2	.047	1,6	.063	–	8	–		●	
left hand													
LT16EL28UN	16	–	–	0,6	.024	0,7	.027	–	28	–		●	
LT16EL24UN	16	–	–	0,7	.027	0,8	.031	–	24	–		●	
LT16EL20UN	16	–	–	0,8	.031	0,9	.035	–	20	–		●	
LT16EL18UN	16	–	–	0,8	.031	1,0	.039	–	18	–		●	
LT16EL16UN	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT16EL14UN	16	–	–	1,0	.039	1,2	.047	–	14	–		●	
LT16EL12UN	16	–	–	1,1	.043	1,4	.055	–	12	–		●	
LT16EL11UN	16	–	–	1,1	.043	1,4	.057	–	11	–		●	
LT16EL8UN	16	–	–	1,2	.047	1,6	.063	–	8	–		●	

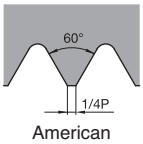
LT-NR-UNCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT11NR32UNCB	11	–	–	1,2	.047	0,5	.020	–	32	–		●	
LT11NR24UNCB	11	–	–	0,7	.028	0,8	.031	–	24	–		●	
LT16NR20UNCB	16	–	–	0,7	.028	0,6	.024	–	20	–		●	
LT11NR20UNCB	11	–	–	0,6	.024	0,8	.031	–	20	–		●	
LT16NR18UNCB	16	–	–	0,6	.024	0,8	.031	–	18	–		●	
LT11NR18UNCB	11	–	–	0,6	.024	0,8	.031	–	18	–		●	
LT11NR16UNCB	11	–	–	0,7	.028	0,8	.031	–	16	–		●	
LT16NR16UNCB	16	–	–	0,7	.028	0,8	.031	–	16	–		●	
LT16NR14UNCB	16	–	–	1,1	.043	1,5	.059	–	14	–		●	
LT16NR12UNCB	16	–	–	1,1	.043	1,5	.059	–	12	–		●	
LT16NR10UNCB	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16NR8UNCB	16	–	–	1,1	.043	1,5	.059	–	8	–		●	

Thread Forms

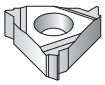


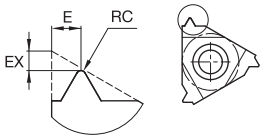
American
UN-External



American
UN-Internal


LT-NR-UNK


LT-NR/L-UN



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

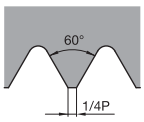
LT-NR-UNK

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR16UNK	16	0,08	.003	0,9	.035	1,1	.043	–	16	–			●
LT16NR12UNK	16	0,10	.004	1,1	.043	1,4	.055	–	12	–			●
LT16NR8UNK	16	0,17	.007	1,3	.051	1,5	.059	–	8	–			●

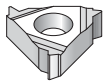
LT-NR/L-UN

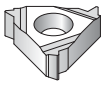
catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR40UN	11	–	–	0,6	.024	0,6	.024	–	40	–		●	
LT11NR32UN	11	–	–	0,6	.024	0,6	.024	–	32	–		●	
LT11NR28UN	11	–	–	0,6	.024	0,7	.027	–	28	–		●	
LT11NR24UN	11	–	–	0,7	.027	0,8	.031	–	24	–		●	
LT11NR20UN	11	–	–	0,8	.031	0,9	.035	–	20	–		●	
LT11NR18UN	11	–	–	0,8	.031	1,0	.039	–	18	–		●	
LT11NR16UN	11	–	–	0,9	.035	1,1	.043	–	16	–	●	●	
LT16NR28UN	16	–	–	0,6	.024	0,7	.027	–	28	–		●	
LT16NR32UN	16	–	–	0,6	.024	0,6	.024	–	32	–		●	
LT16NR24UN	16	–	–	0,7	.027	0,8	.031	–	24	–		●	
LT16NR20UN	16	–	–	0,8	.031	0,9	.035	–	20	–		●	
LT16NR18UN	16	–	–	0,8	.031	1,0	.039	–	18	–		●	
LT16NR16UN	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT16NR14UN	16	–	–	0,9	.035	1,2	.047	–	14	–		●	
LT16NR12UN	16	–	–	1,1	.043	1,4	.055	–	12	–	●	●	
LT16NR10UN	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16NR8UN	16	–	–	1,1	.043	1,5	.059	–	8	–		●	
left hand													
LT11NL32UN	11	–	–	0,6	.024	0,6	.024	–	32	–		●	
LT16NL16UN	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT16NL12UN	16	–	–	1,1	.043	1,4	.055	–	12	–		●	
LT16NL10UN	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16NL8UN	16	–	–	1,1	.043	1,5	.059	–	8	–		●	

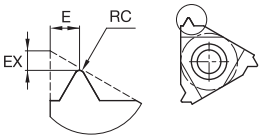
Thread Forms



American
UN-Internal


LT-ER/L-UNJ


LT-NR/L-UNJ



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

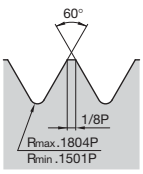
LT-ER/L-UNJ

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER32UNJ	16	–	–	0,6	.024	0,7	.027	–	32	–		●	
LT16ER28UNJ	16	–	–	0,7	.027	0,7	.027	–	28	–		●	
LT16ER24UNJ	16	–	–	0,7	.027	0,8	.031	–	24	–		●	
LT16ER20UNJ	16	–	–	0,8	.031	0,9	.035	–	20	–	●	●	
LT16ER18UNJ	16	–	–	0,8	.031	1,0	.039	–	18	–	●	●	
LT16ER16UNJ	16	–	–	0,9	.035	1,1	.043	–	16	–	●	●	
LT16ER14UNJ	16	–	–	1,0	.039	1,2	.047	–	14	–	●	●	
LT16ER12UNJ	16	–	–	1,1	.043	1,3	.051	–	12	–	●	●	
left hand													
LT16EL16UNJ	16	–	–	0,9	.035	1,1	.043	–	16	–		●	

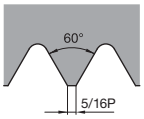
LT-NR/L-UNJ

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT11NR18UNJ	11	–	–	0,8	.031	1,0	.039	–	18	–		●	
LT11NR16UNJ	11	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT16NR16UNJ	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT11NR14UNJ	11	–	–	1,0	.039	1,2	.047	–	14	–		●	
LT16NR12UNJ	16	–	–	1,1	.043	1,3	.051	–	12	–		●	

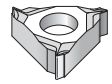
Thread Forms

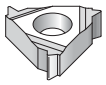


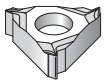
UNJ-External

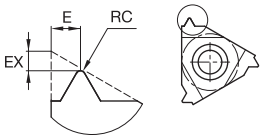


UNJ-Internal


LT-ER-NPTCB


LT-ER/L-NPT


LT-NR-NPTCB



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER-NPTCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER14NPTCB	16	–	–	1,1	.043	1,5	.059	–	14	.7500	●	●	

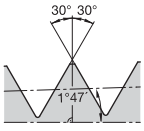
LT-ER/L-NPT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER27NPT	16	–	–	0,7	.027	0,8	.031	–	27	.7500		●	
LT16ER18NPT	16	–	–	0,8	.031	1,0	.039	–	18	.7500	●	●	
LT16ER14NPT	16	–	–	0,9	.035	1,2	.047	–	14	.7500	●	●	
LT16ER115NPT	16	–	–	1,1	.043	1,5	.059	–	11.5	.7500	●	●	
LT16ER8NPT	16	–	–	1,3	.051	1,8	.071	–	8	.7500		●	

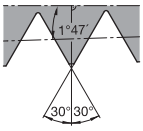
LT-NR-NPTCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR14NPTCB	16	–	–	1,35	.053	1,20	.047	–	14	.7500		●	
LT16NR115NPTCB	16	–	–	1,10	.043	1,50	.059	–	11.5	.7500		●	

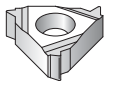
Thread Forms

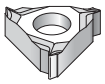


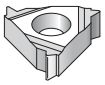
NPT-External

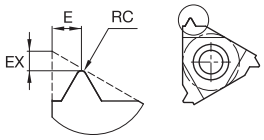


NPT-Internal


LT-NR/L-NPT


LT-ER-NPTFCB


LT-ER/L-NPTF



● first choice
○ alternate choice

		KC5010	KC5025	KU25T
P		●	●	●
M		●	●	●
K		●	●	●
N		○	○	○
S		●	●	●
H		○		

LT-NR/L-NPT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR18NPT	11	–	–	0,8	.031	1,0	.039	–	18	.7500		●	
LT11NR14NPT	11	–	–	0,8	.031	1,0	.039	–	14	.7500	●	●	
LT16NR14NPT	16	–	–	0,9	.035	1,2	.047	–	14	.7500		●	
LT16NR115NPT	16	–	–	1,1	.043	1,5	.059	–	11.5	.7500	●	●	
LT16NR8NPT	16	–	–	1,3	.051	1,8	.071	–	8	.7500		●	

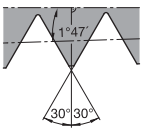
LT-ER-NPTFCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
LT16ER115NPTFCB	16	–	–	1,1	.043	1,5	.059	–	11.5	.7500		●	

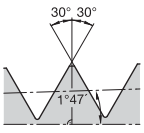
LT-ER/L-NPTF

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER14NPTF	16	–	–	0,9	.035	1,2	.047	–	14	.7500		●	
LT16ER115NPTF	16	–	–	1,1	.043	1,5	.059	–	11.5	.7500		●	

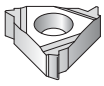
Thread Forms

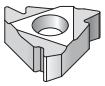


NPT-Internal

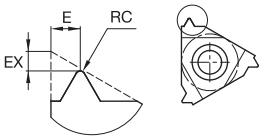


NPTF-External


LT-NR/L-NPTF


LT-ER/L-55


LT-NR/L-55



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-NPTF

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR14NPTF	11	–	–	0,8	.031	1,0	.039	–	14	.7500		●	
LT16NR14NPTF	16	–	–	0,9	.035	1,2	.047	–	14	.7500		●	
LT16NR115NPTF	16	–	–	1,1	.043	1,5	.059	–	11.5	.7500		●	

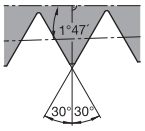
LT-ER/L-55

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT16ERA55	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,50	48-16	–		●	
LT16ERAG55	16	0,08	.003	1,2	.047	1,7	.067	0,50-3,00	48-8	–	●	●	
LT16ERG55	16	0,20	.008	1,2	.047	1,7	.067	1,75-3,00	14-8	–		●	
LT22ERN55	22	0,43	.017	1,7	.067	2,5	.098	3,50-5,00	7-5	–		●	
left hand													
LT16ELAG55	16	0,08	.003	1,2	.047	1,7	.067	0,50-3,00	48-8	–		●	

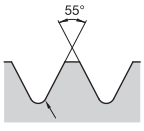
LT-NR/L-55

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT11NRA55	11	0,05	.002	0,8	.031	0,9	.035	0,50-1,50	48-16	–		●	
LT16NRA55	16	0,05	.002	0,8	.031	0,9	.035	0,50-1,50	48-16	–		●	
LT16NRAG55	16	0,07	.003	1,2	.047	1,7	.067	0,50-3,00	48-8	–		●	
LT16NRG55	16	0,21	.008	1,2	.047	1,7	.067	1,75-3,00	14-8	–		●	
LT22NRN55	22	0,43	.017	1,7	.067	2,5	.098	3,50-5,00	7-5	–		●	

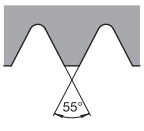
Thread Forms



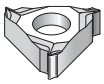
NPTF-Internal

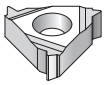


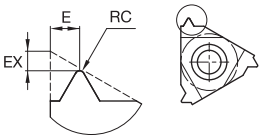
Partial Profile
55° External



Partial Profile
55° Internal


LT-ER-WCB


LT-ER/L-W



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

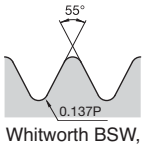
LT-ER-WCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER14WCB	16	–	–	1,3	.051	1,5	.059	–	14	–	●	●	
LT16ER11WCB	16	–	–	1,3	.051	1,5	.059	–	11	–		●	

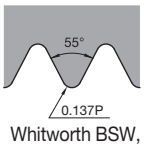
LT-ER/L-W

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF			
right hand													
LT16ER28W	16	–	–	0,6	.024	0,7	.027	–	28	–		●	
LT16ER24W	16	–	–	0,7	.028	0,8	.031	–	24	–		●	
LT16ER20W	16	–	–	0,8	.031	0,9	.035	–	20	–		●	
LT16ER19W	16	–	–	0,8	.031	1,0	.039	–	19	–	●	●	
LT16ER18W	16	–	–	0,8	.031	1,0	.039	–	18	–		●	
LT16ER16W	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT16ER14W	16	–	–	1,0	.039	1,2	.047	–	14	–	●	●	
LT16ER12W	16	–	–	1,1	.043	1,4	.055	–	12	–		●	
LT16ER11W	16	–	–	1,1	.043	1,5	.059	–	11	–	●	●	
LT16ER10W	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16ER9W	16	–	–	1,2	.047	1,7	.067	–	9	–		●	
LT16ER8W	16	–	–	1,2	.047	1,5	.059	–	8	–		●	
LT22ER6W	22	–	–	1,6	.063	2,3	.090	–	6	–		●	
LT22ER7W	22	–	–	1,6	.063	2,3	.090	–	7	–		●	
left hand													
LT16EL14W	16	–	–	1,0	.039	1,2	.047	–	14	–		●	
LT16EL11W	16	–	–	1,1	.043	1,5	.059	–	11	–		●	

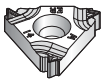
Thread Forms

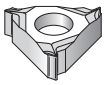


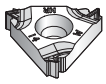
Whitworth BSW, BSF, BSP-External

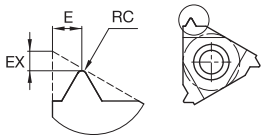


Whitworth BSW, BSF, BSP-Internal


LT-ER/L-WK


LT-NR-WCB


LT-NR/L-WK



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER/L-WK

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER11WK	16	0,29	.012	1,1	.043	1,5	.059	–	11	–			●

LT-NR-WCB

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR14WCB	16	–	–	1,3	.051	1,5	.059	–	14	–		●	
LT16NR11WCB	16	–	–	1,3	.051	1,5	.059	–	11	–		●	

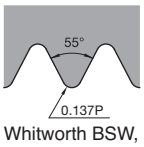
LT-NR/L-WK

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR11WK	16	0,28	.011	1,1	.043	1,5	.059	–	11	–			●

Thread Forms

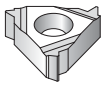


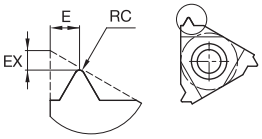
Whitworth BSW, BSF, BSP-External



Whitworth BSW, BSF, BSP-Internal


LT-NR/L-W


LT-ER/L-BSPT



● first choice
○ alternate choice

P	●	●	●	
M	●	●	●	
K	●	●	●	
N	○	○	○	
S	●	●	●	
H	○			

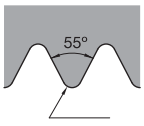
LT-NR/L-W

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR20W	16	–	–	0,8	.031	0,9	.035	–	20	–		●	
LT11NR19W	11	–	–	0,8	.031	1,0	.039	–	19	–		●	
LT16NR19W	16	–	–	0,8	.031	1,0	.039	–	19	–		●	
LT16NR16W	16	–	–	0,9	.035	1,1	.043	–	16	–		●	
LT11NR14W	11	–	–	0,9	.035	1,1	.043	–	14	–		●	
LT16NR14W	16	–	–	1,0	.039	1,2	.047	–	14	–		●	
LT16NR12W	16	–	–	1,1	.043	1,4	.055	–	12	–		●	
LT16NR11W	16	–	–	1,1	.043	1,5	.059	–	11	–	●	●	
LT16NR10W	16	–	–	1,1	.043	1,5	.059	–	10	–		●	
LT16NR8W	16	–	–	1,2	.047	1,5	.059	–	8	–		●	
LT22NR6W	22	–	–	1,6	.063	2,3	.090	–	6	–		●	
LT22NR7W	22	–	–	1,6	.063	2,3	.090	–	7	–		●	
left hand													
LT16NL11W	16	–	–	1,1	.043	1,5	.059	–	11	–		●	

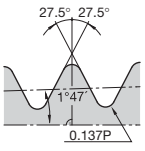
LT-ER/L-BSPT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER14BSPT	16	–	–	1,0	.039	1,2	.047	–	14	.7500		●	
LT16ER11BSPT	16	–	–	1,1	.043	1,5	.059	–	11	.7500		●	

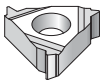
Thread Forms

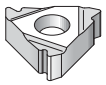


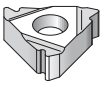
Whitworth BSW, BSF, BSP-Internal

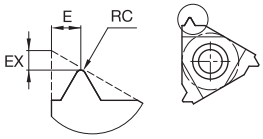


BSPT-External


LT-ER/L-BSPT


LT-ER/L-API


LT-NR/L-API



● first choice
○ alternate choice

	KC5010	KC5025	KU25T
P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-BSPT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT11NR14BSPT	11	–	–	0,9	.035	1,0	.039	–	14	.7500		●	
LT16NR14BSPT	16	–	–	1,0	.039	1,2	.047	–	14	.7500		●	
LT16NR11BSPT	16	–	–	1,1	.043	1,5	.059	–	11	.7500		●	

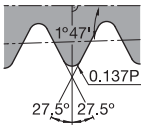
LT-ER/L-API

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT27ER5API403	28	0,51	.020	2,0	.080	2,8	.110	–	5	–		●	
LT22ER5API403	22	–	–	1,8	.071	2,6	.102	–	5	3.0000	●		
LT27ER4API383	28	0,97	.038	2,0	.080	2,8	.110	–	4	–		●	
LT27ER4API382	28	0,97	.038	2,0	.080	2,8	.110	–	4	–		●	
LT22ER4API382	22	–	–	2,1	.083	2,8	.110	–	4	2.0000		●	
LT27ER4API503	28	0,64	.025	2,0	.080	2,8	.110	–	4	–		●	
LT27ER4API502	28	0,64	.025	2,0	.080	2,8	.110	–	4	–		●	
LT22ER4API503	22	–	–	2,0	.079	2,9	.114	–	4	3.0000	●		
LT22ER4API502	22	–	–	2,0	.079	2,9	.114	–	4	2.0000	●	●	

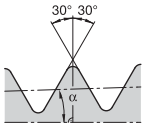
LT-NR/L-API

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT27NR5API403	28	0,52	.020	2,0	.080	2,8	.110	–	5	–		●	
LT27NR4API383	28	0,99	.039	2,0	.080	2,8	.110	–	4	–		●	
LT27NR4API382	28	0,99	.039	2,0	.080	2,8	.110	–	4	–		●	
LT22NR5API403	22	–	–	1,8	.071	2,6	.102	–	5	3.0000		●	
LT22NR4API382	22	–	–	2,1	.083	2,8	.110	–	4	2.0000		●	
LT27NR4API503	28	0,65	.026	2,0	.080	2,8	.114	–	4	–		●	
LT27NR4API502	28	0,65	.026	2,0	.080	3,8	.110	–	4	–		●	
LT22NR4API502	22	–	–	2,1	.083	3,1	.122	–	4	2.0000		●	

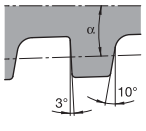
Thread Forms



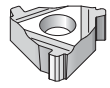
BSPT-Internal

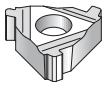


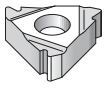
API Rotary Shoulder Connections-External
a = 1/2 arctan (TPF/12)

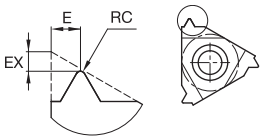


API Rotary Shoulder Connections-Internal
a = 1/2 arctan (TPF/12)


LT-ER/L-BUT


LT-NR/L-BUT


LT-ER/L-APIRD



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-ER/L-BUT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT22ER5BUT75	22	–	–	3,10	.122	1,9	.075	–	5	.7500		●	

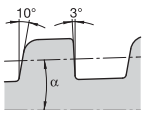
LT-NR/L-BUT

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT22NR5BUT1	22	–	–	2,8	.110	1,9	.075	–	5	1.0000		●	
LT22NR5BUT75	22	–	–	2,8	.110	1,9	.075	–	5	.7500		●	

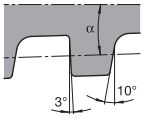
LT-ER/L-APIRD

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER10APIRD	16	–	–	1,2	.047	1,4	.055	–	10	.7500		●	
LT16ER8APIRD	16	–	–	1,3	.051	1,5	.059	–	8	.7500		●	
left hand													
LT16EL8APIRD	16	–	–	1,3	.051	1,5	.059	–	8	.7500		●	

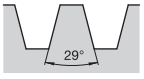
Thread Forms



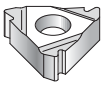
API Buttress Casing-External
a = 1/2 arctan (TPF/12)

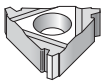


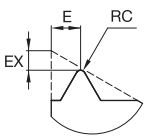
API Buttress Casing-Internal
a = 1/2 arctan (TPF/12)



API Round-External


LT-NR/L-APIRD


LT-ER/L-ACME





● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

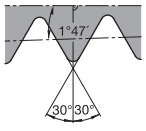
LT-NR/L-APIRD

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR10APIRD	16	–	–	1,2	.047	1,4	.055	–	10	.7500		●	
LT16NR8APIRD	16	–	–	1,3	.051	1,5	.059	–	8	.7500		●	

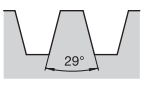
LT-ER/L-ACME

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER16ACME	16	–	–	1,0	.039	1,1	.043	–	16	–		●	
LT16ER12ACME	16	–	–	1,1	.043	1,2	.047	–	12	–		●	
LT16ER10ACME	16	–	–	1,3	.051	1,4	.055	–	10	–		●	
LT16ER8ACME	16	–	–	1,4	.055	1,5	.059	–	8	–		●	
LT22ER6ACME	22	–	–	1,8	.071	2,1	.083	–	6	–		●	
LT22ER5ACME	22	–	–	2,0	.079	2,3	.090	–	5	–		●	
LT27ER4ACME	–	–	–	–	–	–	–	–	–	–		●	

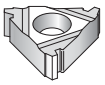
Thread Forms

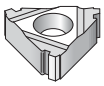


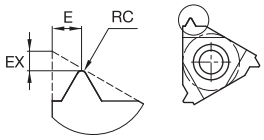
API Round-Internal



Acme External


LT-NR/L-ACME


LT-ER/L-STACME



● first choice
○ alternate choice

		KC5010	KC5025	KU25T
P		●	●	●
M		●	●	●
K		●	●	●
N		○	○	○
S		●	●	●
H		○		

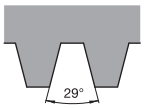
LT-NR/L-ACME

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR12ACME	16	–	–	1,2	.047	1,3	.051	–	12	–		●	
LT16NR10ACME	16	–	–	1,2	.047	1,3	.051	–	10	–		●	
LT16NR8ACME	16	–	–	1,4	.055	1,5	.059	–	8	–		●	
LT22NR6ACME	22	–	–	1,8	.071	2,1	.083	–	6	–		●	
LT22NR5ACME	22	–	–	2,0	.079	2,3	.090	–	5	–		●	
left hand													
LT16NL10ACME	16	–	–	1,2	.047	1,3	.051	–	10	–		●	
LT16NL8ACME	16	–	–	1,4	.055	1,5	.059	–	8	–		●	

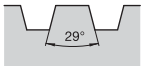
LT-ER/L-STACME

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER16STACME	16	–	–	1,0	.039	1,0	.039	–	16	–		●	
LT16ER12STACME	16	–	–	1,2	.047	1,2	.047	–	12	–		●	
LT16ER10STACME	16	–	–	1,2	.047	1,3	.051	–	10	–		●	
LT16ER8STACME	16	–	–	1,4	.055	1,5	.059	–	8	–		●	
LT16ER6STACME	16	–	–	1,7	.067	1,8	.071	–	6	–		●	
LT22ER5STACME	22	–	–	2,1	.083	2,3	.090	–	5	–		●	
LT27ER4STACME	–	–	–	–	–	–	–	–	–	–		●	
LT27EL4STACME	–	–	–	–	–	–	–	–	–	–		●	

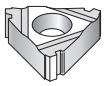
Thread Forms

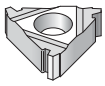


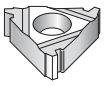
Acme Internal

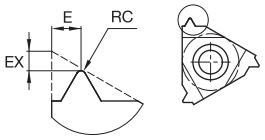


Stub Acme-External


LT-NR/L-STACME


LT-ER/L-TR


LT-NR/L-TR



● first choice
○ alternate choice

P	●	●	●
M	●	●	●
K	●	●	●
N	○	○	○
S	●	●	●
H	○		

LT-NR/L-STACME

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR16STACME	16	–	–	1,0	.039	1,0	.039	–	16	–		●	
LT16NR14STACME	16	–	–	1,1	.043	1,1	.043	–	14	–		●	
LT16NR12STACME	16	–	–	1,1	.043	1,2	.047	–	12	–		●	
LT16NR10STACME	16	–	–	1,2	.047	1,3	.051	–	10	–		●	
LT16NR8STACME	16	–	–	1,4	.055	1,5	.059	–	8	–		●	
LT16NR6STACME	16	–	–	1,7	.067	1,8	.071	–	6	–		●	
LT22NR6STACME	22	–	–	1,8	.071	1,8	.071	–	6	–		●	
LT27NL4STACME	–	–	–	–	–	–	–	–	–	–		●	
LT27NR4STACME	–	–	–	–	–	–	–	–	–	–		●	

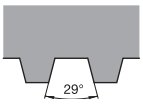
LT-ER/L-TR

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER2TR	16	–	–	1,1	.043	1,3	.051	2,0	–	–		●	
LT16ER3TR	16	–	–	1,3	.051	1,5	.059	3,0	–	–		●	
LT22ER4TR	22	–	–	1,7	.067	1,9	.075	4,0	–	–		●	
LT22ER5TR	22	–	–	2,1	.083	2,5	.098	5,0	–	–		●	

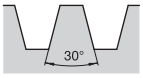
LT-NR/L-TR

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR2TR	16	–	–	1,1	.043	1,3	.051	2,0	–	–		●	
LT16NR3TR	16	–	–	1,3	.051	1,5	.059	3,0	–	–		●	
LT22NR4TR	22	–	–	1,7	.067	1,9	.075	4,0	–	–		●	
LT22NR5TR	22	–	–	2,1	.083	2,5	.098	5,0	–	–		●	

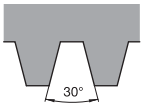
Thread Forms



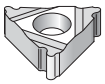
Stub Acme-Internal

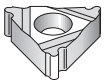


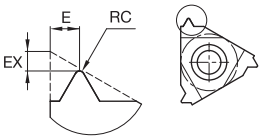
Trapez-External



Trapez-Internal


LT-ER/L-RD


LT-NR/L-RD



● first choice
○ alternate choice

P		●	●	●
M		●	●	●
K		●	●	●
N		○	○	○
S		●	●	●
H		○		

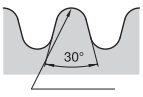
LT-ER/L-RD

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16ER8RD	16	0,76	.030	1,4	.055	1,3	.051	–	8	–		●	
LT22ER6RD	22	1,01	.040	1,5	.059	1,7	.067	–	6	–		●	

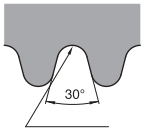
LT-NR/L-RD

catalog number	insert size	RC mm	RC in	EX mm	EX in	E mm	E in	thread pitch mm	TPI	TPF	KC5010	KC5025	KU25T
right hand													
LT16NR8RD	16	0,70	.028	1,4	.055	1,4	.055	–	8	–		●	
LT22NR6RD	22	0,93	.037	1,5	.059	1,7	.067	–	6	–		●	

Thread Forms



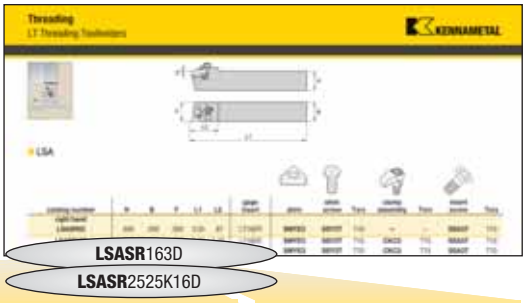
Round External



Round-Internal

How Do Catalog Numbers Work?

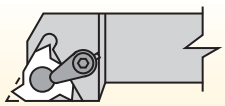
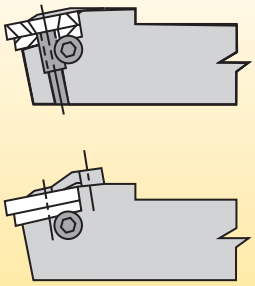
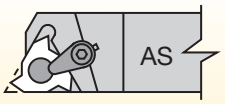
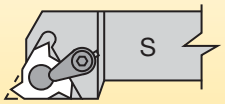
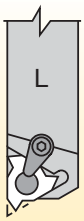
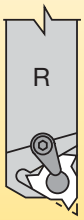
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Inch

L	S	AS	R

Metric

L	S	AS	R
Insert Style	Insert Holding Method	Tool Style	Hand of Tool
 **L** = Laydown triangle	**S** = Insert screw or clamp only 	 **AS** = Straight shank  **S** = Offset shank	**L** = Left hand  **R** = Right hand 

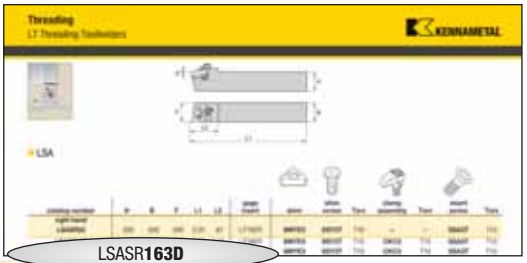
NOTE: Toolholders with primary shank sizes larger than 1/2" or 12mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**

LT Threading Shim Catalog Numbering System

SM	Y	E	3	2P
Shim	Shim for LT Standard Inserts	Insert Threading	Insert Size	Shim Angle
		E = External **I** = Internal	D value in 1/8"	**2P** = 2° positive **1P** = 1° positive __ = 0° neutral **1N** = 1° negative **2N** = 2° negative **3N** = 3° negative

NOTE: For shims and shim kits, see pages E105–E107.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.

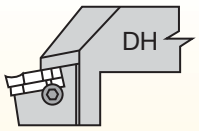


Inch

	16	3	D

Metric

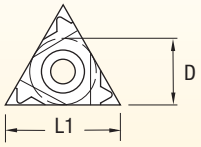
	2525K	16	D
Drop Head	Shank Size	Insert Size	Qualified Surface and Length



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.

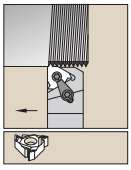
metric:
Shank height and width in mm and holder length according to ISO standard.

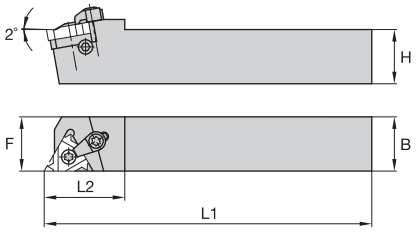
Size equals number of 1/8" increments of IC.



insert size (inch)	insert size (mm)	D (inch)	L1 (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

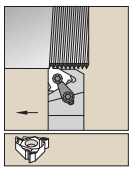
C = Qualified back and end, 5" long
D = Qualified back and end, 6" long
E = Qualified back and end, 7" long
T = Qualified back and end, 3.250" long
Q = Qualified metric holder

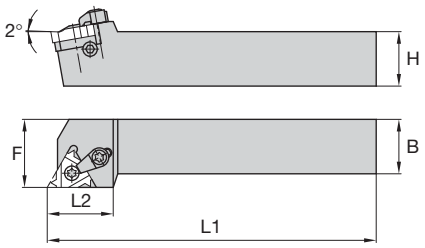




LSA

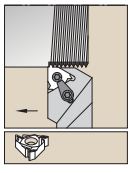
catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSASR83	.500	.500	.500	3.25	.87	LT16ER	**SMYE3**	**SSY3T**	T10	**—**	—	**SSA3T**	T10
LSASR103	.625	.625	.630	5.00	1.20	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR123	.750	.750	.750	5.00	1.20	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR163	1.000	1.000	1.000	6.00	1.20	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR203	1.250	1.250	1.250	7.00	1.18	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASR164	1.000	1.000	1.000	6.00	1.42	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand													
LSASL83	.500	.500	.500	3.25	.87	LT16EL	**SMYI3**	**SSY3T**	T10	**—**	—	**SSA3T**	T10
LSASL103	.625	.625	.630	5.00	1.20	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL123	.750	.750	.750	5.00	1.20	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL163	1.000	1.000	1.000	6.00	1.20	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSASL164	1.000	1.000	1.000	6.00	1.42	LT22EL	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

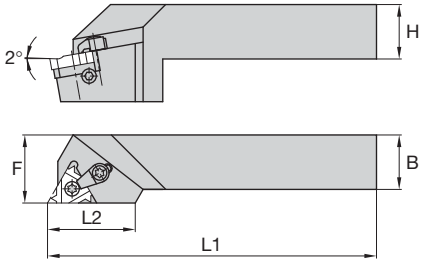




LSS

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSSR123D	.750	.750	1.000	6.00	1.00	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR163D	1.000	1.000	1.250	6.00	1.00	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR203D	1.250	1.250	1.500	6.00	1.00	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSR164D	1.000	1.000	1.250	6.00	1.20	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
LSSR204D	1.250	1.250	1.500	6.00	1.20	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand													
LSSL123D	.750	.750	1.000	6.00	1.00	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSL163D	1.000	1.000	1.250	6.00	1.00	LT16EL	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSL164D	1.000	1.000	1.250	6.00	1.20	LT22EL	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20



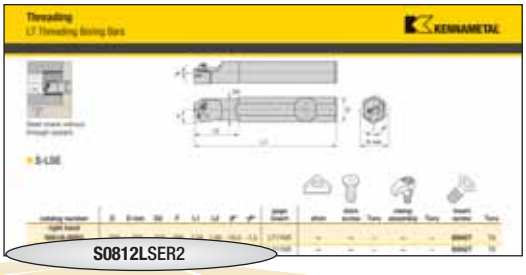


LSS-DH

catalog number	H	B	F	L1	L2	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand													
LSSRDH123C	.750	.750	1.000	5.00	1.50	LT16ER	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
LSSRDH164D	1.000	1.000	1.250	6.00	1.50	LT22ER	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

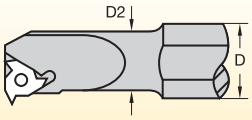
How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



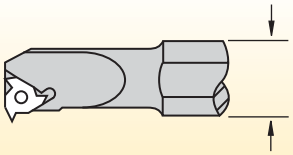
S
Bar Type

08
Primary Necked Shank Bar Diameter



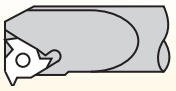
A two-digit number that indicates the primary bar diameter in 1/16" increments. Metric diameter in mm.

12
Secondary (Mounting) Bar Dlameter

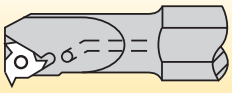


A two-digit number that indicates the secondary bar diameter in 1/16" increments. Metric diameter in mm.

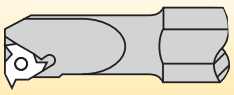
L
Insert Style



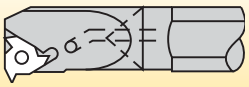
L = Laydown triangle



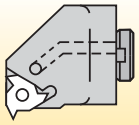
A = Steel with coolant



S = Steel without coolant



E = Carbide with coolant



H = Interchangeable head with coolant

NOTE: Boring bars with primary bar diameters larger than 5/8" or 16mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**

LT Threading Shim Catalog Numbering System

SM
Shim

Y
Shim for LT Standard Inserts

E
Insert Threading

E = External
I = Internal

3
Insert Size

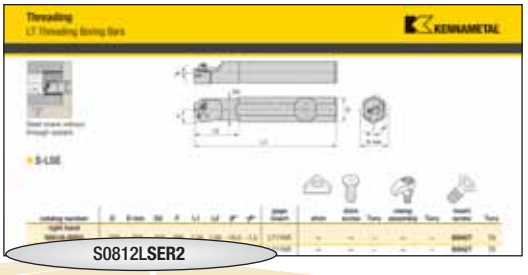
D value in 1/8"

2P
Shim Angle

2P = 2° positive
1P = 1° positive
__ = 0° neutral
1N = 1° negative
2N = 2° negative
3N = 3° negative

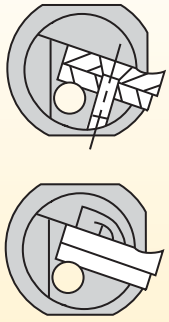
NOTE: For shims and shim kits, see pages E105–E107.

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



S
Insert Holding Method

S = Insert screw or clamp



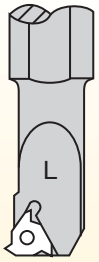
E
Bar Style



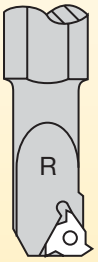
E = End cutting edge mount

R
Hand of Bar

L = Left hand

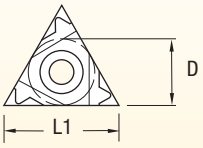


R = Right hand



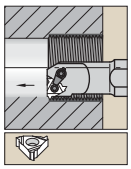
2
Insert Size

Size equals number of 1/8" increments of IC.

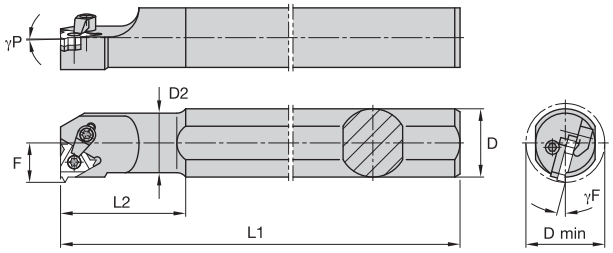


insert size (inch)	insert size (mm)	D (inch)	L1 (mm)
2	11	1/4	11,0
3	16	3/8	16,5
4	22	1/2	22,0

NOTE: Boring bars with primary bar diameters larger than 5/8" or 16mm are supplied with clamp and insert screw. Secure the insert with either the clamp or insert screw. **Do not use both.**



Steel shank without through coolant.

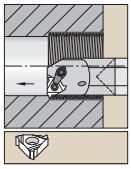


S-LSE

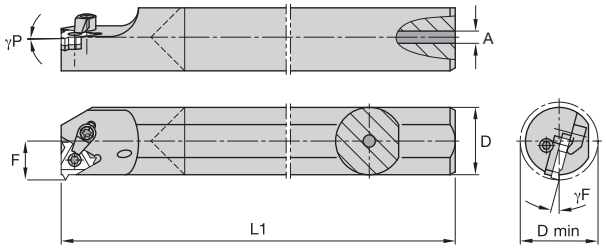


catalog number	D	D min	D2	F	L1	L2	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand																
S0612LSER2	.750	.500	.375	.280	7.00	1.00	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
S0812LSER2	.750	.650	.500	.350	7.00	1.25	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
S1012LSER3	.750	.800	.625	.460	7.00	1.50	-15.0	-1.5	LT16NR	**–**	**–**	–	**–**	–	**SN3TPKG**	T10
S1212LSER3	.750	.900	–	.510	7.00	–	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
S1620LSER3	1.250	1.200	1.000	.650	10.00	2.50	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
S2020LSER3	1.250	1.450	–	.770	10.00	–	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
S1620LSER4	1.250	1.250	1.000	.710	10.00	2.50	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
S2020LSER4	1.250	1.500	–	.850	10.00	–	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand																
S0612LSEL2	.750	.500	.375	.280	7.00	1.00	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
S0812LSEL2	.750	.650	.500	.350	7.00	1.25	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
S1012LSEL3	.750	.800	.625	.460	7.00	1.50	-15.0	-1.5	LT16NL	**–**	**–**	–	**–**	–	**SN3TPKG**	T10
S1212LSEL3	.750	.900	–	.510	7.00	–	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
S1620LSEL3	1.250	1.200	1.000	.650	10.00	2.50	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
S1620LSEL4	1.250	1.250	1.000	.710	10.00	2.50	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

NOTE: Items listed without a shim are designed for a 1.5° inclination angle.



Carbide shank with through coolant.

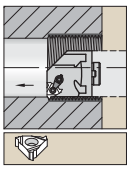


E-LSE

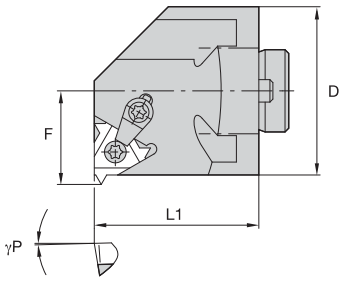


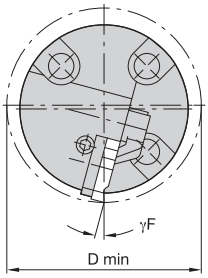
catalog number	D	D min	F	L1	A	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand															
E06LSER2	.375	.500	.280	6.00	.13	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
E08LSER2	.500	.650	.350	8.00	.19	-15.0	-1.5	LT11NR	**–**	**–**	–	**–**	–	**SSN2T**	T8
E10LSER3	.625	.800	.460	10.00	.22	-15.0	-1.5	LT16NR	**–**	**–**	–	**–**	–	**SN3TPKG**	T10
E12LSER3	.750	.900	.510	10.00	.28	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
E16LSER3	1.000	1.200	.650	12.00	.31	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
E16LSER4	1.000	1.250	.710	12.00	.31	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
left hand															
E06LSEL2	.375	.500	.280	6.00	.13	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
E08LSEL2	.500	.650	.350	8.00	.19	-15.0	-1.5	LT11NL	**–**	**–**	–	**–**	–	**SSN2T**	T8
E10LSEL3	.625	.800	.460	10.00	.22	-15.0	-1.5	LT16NL	**–**	**–**	–	**–**	–	**SN3TPKG**	T10
E12LSEL3	.750	.900	.510	10.00	.28	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
E16LSEL3	1.000	1.200	.650	12.00	.31	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
E16LSEL4	1.000	1.250	.710	12.00	.31	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20

NOTE: Items listed without a shim are designed for a 1.5° inclination angle.



With through coolant.





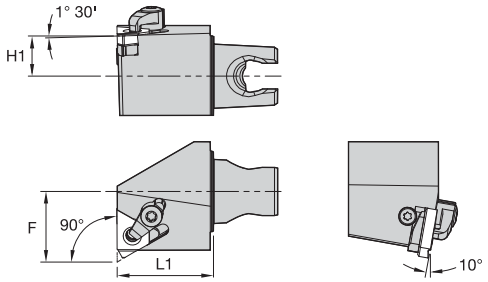
H-LSE





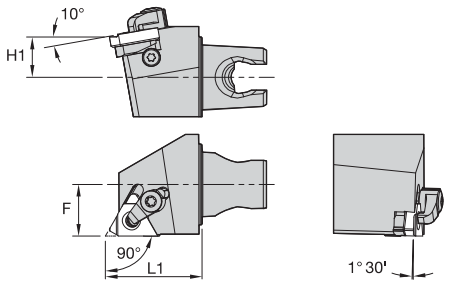

catalog number	D	D min	L1	F	γF°	γP°	gage insert	shim	shim screw	Torx	clamp assembly	Torx	insert screw	Torx
right hand														
H16LSER3	1.000	1.200	1.63	.645	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H20LSER3	1.250	1.450	1.63	.760	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSER3	1.500	1.760	1.63	.885	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H32LSER3	2.000	2.400	1.63	1.276	-15.0	-1.5	LT16NR	**SMYI3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSER4	1.500	1.782	1.63	.973	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSER4	2.000	2.400	1.63	1.276	-15.0	-1.5	LT22NR	**SMYI4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSER5	2.000	2.400	1.63	1.281	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	—	**SSA5T**	—
H40LSER5	2.500	3.030	1.63	1.531	-15.0	-1.5	LT27NR	**SMYI5**	**SSY5T**	T25	**CKC5**	—	**SSA5T**	—
left hand														
H16LSEL3	1.000	1.200	1.63	.645	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H20LSEL3	1.250	1.450	1.63	.760	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSEL3	1.500	1.760	1.63	.885	-15.0	-1.5	LT16NL	**SMYE3**	**SSY3T**	T10	**CKC3**	T15	**SSA3T**	T10
H24LSEL4	1.500	1.782	1.63	.973	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSEL4	2.000	2.400	1.63	1.276	-15.0	-1.5	LT22NL	**SMYE4**	**SSY4T**	T20	**CKC4**	T20	**SSA4T**	T20
H32LSEL5	2.000	2.400	1.63	1.281	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	—	**SSA5T**	—
H40LSEL5	2.500	3.030	1.63	1.531	-15.0	-1.5	LT27NL	**SMYE5**	**SSY5T**	T25	**CKC5**	—	**SSA5T**	—

NOTE: For boring adapters, see pages C119–C121.



LSE • End Mount

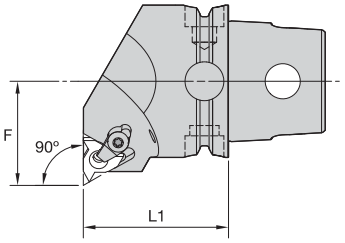
order number	catalog number	L1 mm	L1 in	F mm	F in	H1 mm	H1 in	gage insert	insert screw	shim	shim screw	clamp assembly
	right hand											
3482966	KM20LSER1625	25	.984	17	.669	9,5	.375	LT16EL	SSA3T	SMYI3	SSY3T	CKC3
2399506	KM25LSER1630	30	1.181	22	.866	12,5	.492	LT16EL	SSA3T	SMYI3	SSY3T	CKC3
	left hand											
3482965	KM20LSEL1625	25	.984	17	.669	9,5	.375	LT16ER	SSA3T	SMYE3	SSY3T	CKC3
2399507	KM25LSEL1630	30	1.181	22	.866	12,5	.492	LT16ER	SSA3T	SMYE3	SSY3T	CKC3

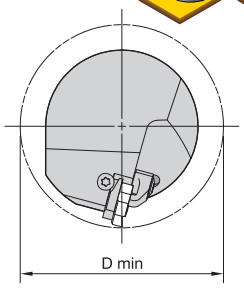


LSS • Side Mount

order number	catalog number	L1 mm	L1 in	F mm	F in	H1 mm	H1 in	gage insert	insert screw	shim	shim screw	clamp assembly
	right hand											
3482968	KM20LSSR1625	25	.984	12,50	.492	9,5	.375	LT16ER	SSA3T	SMYE3	SSY3T	CKC3
2399504	KM25LSSR1630	30	1.181	16,00	.630	12,5	.492	LT16ER	SSA3T	SMYE3	SSY3T	CKC3
3176219	KM25LSSR2230	30	1.181	16,00	.630	12,5	.492	LT22ER	SSA4T	SMYE4	SSY4T	CKC4
	left hand											
3482967	KM20LSSL1625	25	.984	12,50	.492	9,5	.375	LT16EL	SSA3T	SMYI3	SSY3T	CKC3
2399505	KM25LSSL1630	30	1.181	16,00	.630	12,5	.492	LT16EL	SSA3T	SMYI3	SSY3T	CKC3
3176220	KM25LSSL2230	30	1.181	16,00	.630	12,5	.492	LT22EL	SSA4T	SMYI4	SSY4T	CKC4









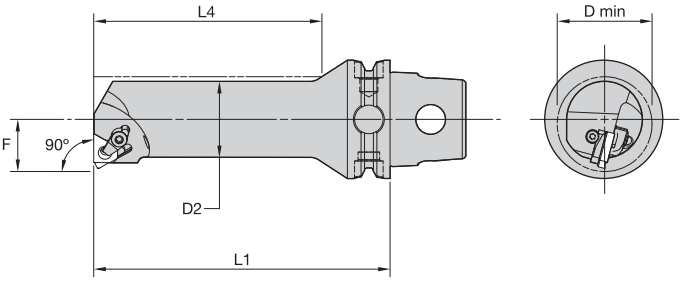
KM QUICK CHANGE

LSE-N 90° • Internal Only

order number	catalog number	L1 mm	L1 in	F mm	F in	D min mm	D min in	gage insert	insert screw	shim	shim screw	clamp assembly	kg	lbs
	right hand													
3950832	**KM40TSLSER16N**	40	1.575	27	1.063	54	2.126	LT16NR	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**	0,35	.77
3950854	**KM40TSLSER22N**	40	1.575	27	1.063	54	2.126	LT22NR	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**	0,35	.77
3959399	**KM40TSLSER27N**	45	1.772	27	1.063	54	2.126	LT27NR	**SSA5T**	**SMYI5**	**SSY5T**	**CKC5**	0,39	.86
	left hand													
3950831	**KM40TSLSEL16N**	40	1.575	27	1.063	54	2.126	LT16NL	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**	0,35	.77
3950853	**KM40TSLSEL22N**	40	1.575	27	1.063	54	2.126	LT22NL	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**	0,35	.77
3959398	**KM40TSLSEL27N**	45	1.772	27	1.063	54	2.126	LT27NL	**SSA5T**	**SMYE5**	**SSY5T**	**CKC5**	0,39	.86

NOTE: Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.







KM QUICK CHANGE

LSE 90°

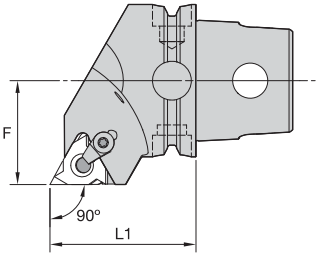
order number	catalog number	D2 mm	D2 in	D min mm	D min in	F mm	F in	L4 mm	L4 in	L1 mm	L1 in	gage insert	kg	lbs
	right hand													
3955464	KM40TSS10DLSER11	10	.39	13	.51	7	.276	35	1.38	60	2.362	LT11NR	0,22	.49
3955466	KM40TSS12ELSER11	12	.47	16	.63	9	.354	42	1.66	70	2.756	LT11NR	0,25	.56
3955468	KM40TSS16FLSER16	16	.63	20	.79	11	.433	56	2.21	80	3.150	LT16NR	0,28	.61
3955470	KM40TSS20GLSER16	20	.79	25	.98	13	.512	70	2.76	90	3.543	LT16NR	0,34	.75
3955472	KM40TSS25HLSER16	25	.98	32	1.26	17	.669	75	2.95	100	3.937	LT16NR	0,50	1.11
3955474	KM40TSS32JLSER16	32	1.26	40	1.57	22	.866	96	3.78	110	4.331	LT16NR	0,72	1.58
3955476	KM40TSS32JLSER22	32	1.26	40	1.57	22	.866	96	3.78	110	4.331	LT22NR	0,71	1.56
	left hand													
3955463	KM40TSS10DLSEL11	10	.39	13	.51	7	.276	35	1.38	60	2.362	LT11NL	0,22	.49
3955465	KM40TSS12ELSEL11	12	.47	16	.63	9	.354	42	1.65	70	2.756	LT11NL	0,25	.55
3955467	KM40TSS16FLSEL16	16	.63	20	.79	11	.433	56	2.21	80	3.150	LT16NL	0,28	.61
3955469	KM40TSS20GLSEL16	20	.79	25	.98	13	.512	70	2.76	90	3.543	LT16NL	0,34	.75
3955471	KM40TSS25HLSEL16	25	.98	32	1.26	17	.669	75	2.95	100	3.937	LT16NL	0,50	1.11
3955473	KM40TSS32JLSEL16	32	1.26	40	1.57	22	.866	96	3.78	110	4.331	LT16NL	0,72	1.58
3955475	KM40TSS32JLSEL22	32	1.26	40	1.57	22	.866	96	3.78	110	4.331	LT22NL	0,71	1.56

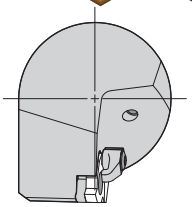
Spare Parts

catalog number	 insert screw	 shim	 shim screw	 clamp assembly
right hand				
KM40TSS10DLSER11	SSN2T	–	–	–
KM40TSS12ELSER11	SSN2T	–	–	–
KM40TSS16FLSER16	SN3TPKG	–	–	–
KM40TSS20GLSER16	SSA3T	SMYI3	SSY3T	CKC3
KM40TSS25HLSER16	SSA3T	SMYI3	SSY3T	CKC3
KM40TSS32JLSER16	SSA3T	SMYI3	SSY3T	CKC3
KM40TSS32JLSER22	SSA4T	SMYI4	SSY4T	CKC4
left hand				
KM40TSS10DLSEL11	SSN2T	–	–	–
KM40TSS12ELSEL11	SSN2T	–	–	–
KM40TSS16FLSEL16	SN3TPKG	–	–	–
KM40TSS20GLSEL16	SSA3T	SMYE3	SSY3T	CKC3
KM40TSS25HLSEL16	SSA3T	SMYE3	SSY3T	CKC3
KM40TSS32JLSEL16	SSA3T	SMYE3	SSY3T	CKC3
KM40TSS32JLSEL22	SSA4T	SMYE4	SSY4T	CKC4

NOTE: Items listed without a shim are designed for a 1.5° inclination angle.
Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.









KM QUICK CHANGE

■ LSS 90°

order number	catalog number	L1 mm	L1 in	F mm	F in	gage insert	insert screw	shim	shim screw	clamp assembly	kg	lbs
	right hand											
3950857	**KM40TSLSSR16**	40	1.575	27	1.063	LT16ER	**SSA3T**	**SMYE3**	**SSY3T**	**CKC3**	0,31	.68
3950858	**KM40TSLSSR22**	40	1.575	27	1.063	LT22ER	**SSA4T**	**SMYE4**	**SSY4T**	**CKC4**	0,30	.66
3959401	**KM40TSLSSR27**	45	1.772	27	1.063	LT27ER	**SSA5T**	**SMYE5**	**SSY5T**	**CKC5**	0,37	.82
	left hand											
3950855	**KM40TSLSSL16**	40	1.575	27	1.063	LT16EL	**SSA3T**	**SMYI3**	**SSY3T**	**CKC3**	0,32	.70
3950856	**KM40TSLSSL22**	40	1.575	27	1.063	LT22EL	**SSA4T**	**SMYI4**	**SSY4T**	**CKC4**	0,31	.68
3959400	**KM40TSLSSL27**	45	1.772	27	1.063	LT27EL	**SSA5T**	**SMYI5**	**SSY5T**	**CKC5**	0,37	.82

NOTE: Cutting units are supplied with insert screw and clamp assembly. However, tools are designed to use either the insert screw or the clamp assembly, not both.

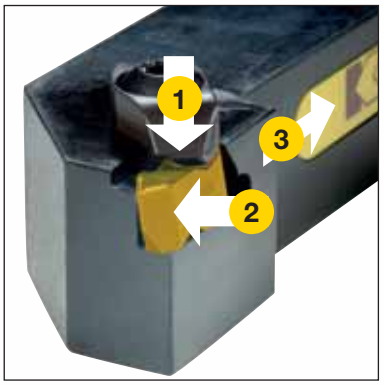


Top Notch™ Thread Tooling

Is the proven high productivity threading solution.

Top Notch Threading with Beyond™ Insert technology provides consistent tool performance and superior clamping thread to almost any operation. With the largest selection of grades and geometries in the industry, the Top Notch Threading system is a proven solution.

- Superior choice for heavy-duty applications.
- Rigid insert clamping design ensures best tool life, surface finish, and workpiece quality.
- Excellent choice for special thread forms and toolholder designs.
- Minimizes built-up edge.
- Precisely cuts most common materials.
- Ensures accurate high-quality threads.
- Eliminates long, troublesome coils.
- Excellent for internal threading operations.
- Available in partial profile inserts for 60° thread forms.



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KENNAMETAL®

Suggested Grade and Speeds for Threading Various Workpiece Materials

workpiece group	workpiece material	recommendations surface speed – SFM				
		uncoated	PVD coated			
		K68	KC5010	KC5025	KC5410	KU25T
free-machining carbon steel	10L18, 10L45, 1213, 12L13, 12L14, 1140, 1141, 11L44, 1151, 10L50	—	300–650	150–650	—	300–450
plain carbon steel	10063, 1008, 1010, 1015, 1018, 1020, 1025, 1026, 1108, 1117	—	250–650	150–575	—	250–400
alloy steels/tool steels 150–325 HB (up to 35 HRC)	1042, 1045, 1070, 1080, 1085, 1090, 1095, 1541, 1561, 1572, 5140, 8620, W1, O1, S1, P20, H13, D2, A6, H13, L6	—	250–650	125–550	—	250–400
alloy steels/tool steels 330–450 HB (36–47 HRC)		—	200–525	—	—	200–350
martensitic/ferritic stainless/precipitation hardening	416, 420F, 440F, 405, 409, 429, 430, 434, 436, 442, PH	—	150–525	100–400	—	80–200
austenitic stainless steel	201, 202, 301, 302, 303, 304, 304, 305, 321, 347, 348, 310, 314, 316, 316L, 330	200–350	200–350	150–450	—	80–350
gray cast iron 135–270 HB	class 20, 30, 35, 45	200–300	200–780	150–400	—	100–355
gray cast iron 275–450 HB	class 50, 55, 60	150–250	150–575	50–250	—	100–355
alloy/ductile iron	A536, J434C, 60-40-18, 80-55-06, 100-70-03	150–250	150–650	100–525	—	100–355
free-machining aluminum alloys	2024-T4, 2014-T6, 6061-T6 2011-T3, 3003-H18, A2, Alcan, Alcoa 510, Duralumin	400–800	400–1200	—	500–1500	100–1000
high-silicon aluminum alloys	A380, A390, A380-1, A390-1, A380-2	—	—	—	—	—
copper/zinc/brass		250–600	250–1000	150–775	—	100–800
non-metallics	Graphite, Nylon, Plastics, Rubbers, Phenolics, Carbon	400–1500	400–1300	150–1000	—	100–1000
high-temperature alloys 125–269 HB (up to 27 HRC)	Nickel 200, Monel, R405, Monel K500, INCONEL 600, INCONEL 625/901x750/718, Waspaloy, Hastelloy C	80–120	80–400	40–250	—	45–270
high-temperature alloys 260–450 HB (26–47 HRC)	Rene 95, Waspaloy A286, Incoloy 800, Haynes 188, Stellite F, Haynes 25	80–100	100–250	20–200	—	45–200
titanium alloys	Ti-6Al-4V, Ti-5Al-2.5Sn	110–180	110–325	—	—	45–250

NOTE: When workpiece hardness levels are at the top of a range, starting SFM should be at the lower end. Regularly inspect insert clamps for worn flats.

Edge preparation:
Uncoated — sharp
PVD coated — light hone except positive top rake, top rake-sharp

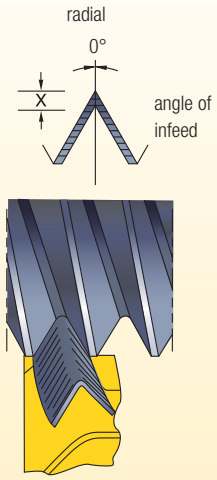
Tool Detective

problem	cause	possible solution
thread with torn finish 	• Burrs. • Torn finish. • Steps.	• Use positive rake or full profile insert. • Increase coolant concentration. • Alter infeed. • Increases SFM. • Check machine “Z” travel axis. • Check insert form. • Check for correct shim in LT system.
chatter 	• Poor rigidity. • Incorrect speed. • Insert movement. • Improper infeed. • Off centerline. • Wrong edge prep.	• Minimize tool overhang. • Check for workpiece deflection. • Adjust SFM. • Check insert and clamp. • Use modified feed angle. • Verify that tool cutting position is at workpiece centerline. • Adjust hone level by ordering special insert.
built-up edge 	• Speed too low. • Insufficient coolant. • Chip load. • Wrong edge prep.	• Increase SFM. • Increase coolant concentration and/or flow. • Adjust infeed angle. • Increase depth of cut per pass. • Adjust hone level by ordering special insert.
deformation 	• Wrong grade. • Speed too high. • Improper infeed angle. • Insufficient coolant.	• Use a more wear-resistant grade (e.g., KC5010™). • Reduce SFM. • Alter infeed method/angle. • Increase coolant flow.
chipping  	• Improper infeed. • Chip load. • Wrong grade. • Incorrect speed. • Poor rigidity. • Wrong edge prep.	• Alter infeed to modified flank. • Adjust chip load. • Increase or decrease number of passes. • Eliminate spring passes. • Use tougher grade (e.g., KC5025™). • Increase SFM if chipping on trailing edge. • Decrease SFM if chipping on leading edge. • Minimize tool overhang. • Check for insert movement/check clamp. • Check for possible part deflection. • Adjust hone size by ordering special insert.
broken nose 	• Heavy chip load. • Small nose radius. • Wrong grade. • Improper infeed. • Wrong edge prep.	• Decrease chip load. • Use large nose radius if allowable. • Use tougher grade (e.g., KC5025). • Alter infeed to modified flank. • Adjust hone size by ordering special insert.
flank wear 	• Wrong grade. • Insufficient coolant. • Off centerline.	• Use a more wear-resistant grade (e.g., KC5025). • Increase coolant flow. • Check the centerline height of the tool. (The smaller the diameter, the more critical the need for centerline accuracy.)

Troubleshooting Matrix

problem	possible solutions															
	increase SFM	reduce SFM	increase chip load	decrease chip load where failure occurs	use tougher carbide grade	use harder carbide grade	apply coolant	use coated carbide	use topping insert	change infeed angle	check for insert movement and reseat	reduce tool overhang	reselect shim	apply chipbreaker style	reduce DOC	adjust center height	begin cutting threads 12mm before workpiece
chatter	●			●							●	●				●	
burr on crest	●								●								
short tool life		●	●	●		●		●									
chipped leading edge			●	●	●												
chipped trailing edge					●					●							
broken nose (first pass)	●														●	●	
broken nose (after first pass)				●	●					●			●				
built-up on cutting edge	●		●				●	●									
premature topping													●				
splitting threads																	●
poor chip evacuation														●			

Radial



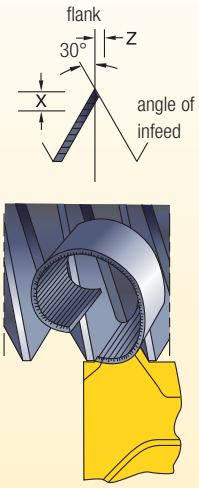
Advantage —

- Cutting on both sides of the thread form places all of the cutting edge in the cut and protects edge from chipping.
- Even wear on the insert.

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



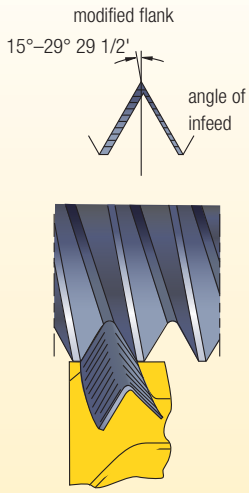
Advantage —

- 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



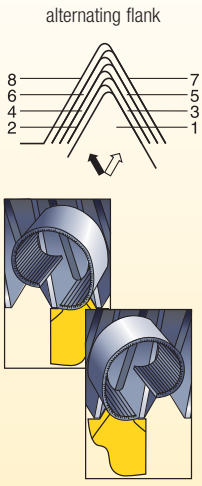
Advantage —

- Tool cuts both sides of thread form, so it 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.
- Combined radial and/or alternating flank infeed.
- Results in good tool life, with wear evenly distributed over both flanks.

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.

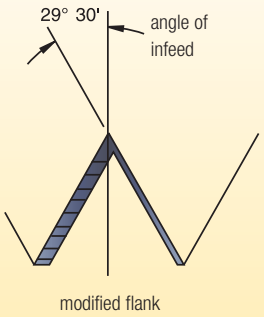
NOTE: Some machine tools may require special programming techniques to achieve this method of infeed.

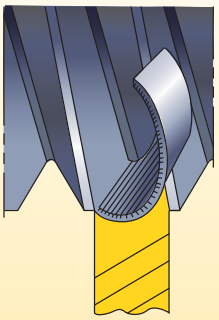
Disadvantage —

- Difficult to cut on conventional machinery.

Machining Guidelines When Using Chop Control Inserts

Kennametal insert technology brings chip control to your threading operations with the Top Notch™ platform. The proprietary Kennametal recessed chip groove, when used according to our recommendations, breaks the chip in most applications. Our positive rake design lowers cutting pressures, which in turn lowers damaging heat generation thus providing 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 29° 30', although 15° to 30° is acceptable. Also, it is important to maintain a minimum of .005" (0,127mm) depth of cut on every pass. In most applications, use of CNC canned cycles produce only marginally successful results. Custom written programs are better and are recommended.

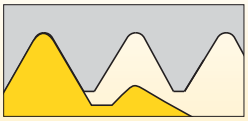
The Last Pass

Some CNC controls require the last pass to be at a 0° infeed angle because the chip will not break on the last pass. On most carbon and alloy steels, the last pass can remain at .005" (0,127mm) depth of cut and produce an acceptable finish. For some materials, a .001" (0,025mm) to .003" (0,076mm) (spring) pass may be used to improve surface finish, however, chip breaking 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° 30'. Do not apply chip control inserts at infeed angles less than 15°.

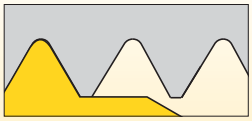
Partial Profile



Tooth profile with universal profile shape:

- 55° or 60° without cutting edges for the tooth tapers.
- Reduced inventory.
- For various pitches in a limited range.
- Preferably one time production.
- Outside/core diameters must be accurately pre-turned.

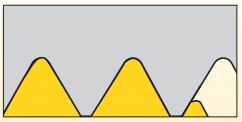
Full Profile



Tooth profile with full profile shape including tooth height:

- For burr-free, precise threads in the specified pitch.
- General application.
- Machining allowance for outside/core diameter around 0.004–0.006".

Multitooth Profile



Multitooth full profile generally with 2–3 teeth:

- Highly productive threading with fewer passes and longer tool life.
- Requires a rigid setup and long thread runout.
- Minimum clearance width approximately 1.25 x E as per indexable insert dimensions table.

Formulas

inch formula		
to find	**given**	**formula**
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 formula		
to find	**given**	**formula**
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

IPM = inch per minute
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 $\frac{\text{max IPM}}{12"}$

metric formula: maximum cutting speed (m/min) = part diameter (mm) x 3.14 x (1/pitch) x $\frac{\text{max mm/min}}{1000mm}$

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

NOTE: Maintain minimum .002" (0,05mm) infeed on last passes to avoid workhardening and excessive abrasion of the threading tool.

Constant Volume Infeed Values for Threading Operations

In most applications, use of CNC canned cycles produces only marginally successful results. This is the case as these programs do not satisfy the .002" (0,05mm) minimum depth of cut specification recommended.

Example:

Infeed per pass formula: accumulated depth = initial DOC x √ # pass

For example, an 8-pitch external thread has a depth of .0789" (2mm).
25% of .0789" (2mm) = approximately .0197" (0,50mm)
(This is the infeed/DOC for the first pass.)

.0197" (0,500mm) x √ 2 = .0278" (0,708mm)

.0278" (0,708) - .0197" (0,500mm) = .0082" (0,207mm)
(This is the infeed/DOC for the second pass.)

.0197" (0,500mm) x √ 3 = .0341" (0,867mm)

.0341" (0,867mm) - .0278" (0,708mm) = .0063" (0,159mm)
(This is the infeed/DOC for the third pass.)

.0197" (0,500mm) x √ 4 = .0394" (1,001mm)

.0394" (1,001mm) - .0341" (0,867mm) = .0053" (0,134mm)
(This is the infeed/DOC for the fourth pass.)

Using Radial Infeed

Bending stress on the cutting edge caused by V-shaped chips from long-chipping steel workpiece materials.

High cutting forces with small cutting thicknesses require sharp edges with high strength.

Its application is recommended for tough and hard, wear-resistant carbides with good resistance to thermal and mechanical shocks.

Using Flank Infeed

Lower bending stress and stabilized cutting edges produce more favorable chip shapes and larger cutting thicknesses.

Carbides with high hardness, good wear resistance, and temperature stability are advantageous.

When turning short threads with short engagement times, there is a good resistance to thermal and mechanical shocks.

Guidelines for Infeeds: How to Determine the Number and the Size of Passes

The number of passes “s” per thread is decisive for successful threading and crest turning. The following tables give standard values for the application condition when machining steel. The proper number of passes must be determined empirically.

If insert breakage occurs, the number of passes must be increased.
With increased wear, we recommend decreasing the number of passes.
The chip thickness should not be less than .0019" (0,05mm).
The allowance at the diameter should not exceed .0078" (0,2mm).

Metric ISO, External Thread Cutting

thread pitch P (mm)	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00
depth h1	.012	.018	.024	.030	.036	.042	.048	.060	.072	.085	.097	.109	.121
number of passes	4	4	5	6	6	8	8	10	12	14	15	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.005/-	.007/-	.008/-	.008/-	.01/-	.009/-	.01/-	.009/-	.009/-	.008/-	.008/-	.009/-	.009/-
2	.003/.002	.005/.003	.006/.003	.006/.004	.008/.004	.008/.004	.009/.005	.01/.006	.011/.006	.012/.007	.013/.007	.014/.008	.015/.009
3	.002/.001	.004/.002	.004/.002	.005/.003	.006/.003	.006/.039	.007/.004	.007/.004	.008/.005	.009/.005	.01/.006	.011/.006	.012/.007
4	.002/.001	.003/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.007/.004	.008/.005	.009/.005	.01/.006
5			.003/.002	.004/.002	.004/.002	.004/.003	.005/.003	.006/.003	.006/.004	.007/.004	.007/.004	.008/.005	.009/.005
6				.003/.002	.004/.002	.004/.002	.004/.003	.005/.003	.006/0.003	.006/.003	.007/.004	.007/.004	.008/.005
7						.004/.002	.004/.002	.005/.003	.005/0.003	.005/.003	.006/.004	.007/.004	.007/.004
8						.003/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004
9								.004/.002	.004/.003	.005/.003	.005/.003	.006/.003	.006/.004
10								.004/.002	.004/.002	.005/.003	.005/.003	.006/.003	.006/.004
11									.004/.002	.004/.002	.005/.003	.005/.003	.006/.003
12									.004/.002	.004/.002	.005/.003	.005/.003	.006/.003
13										.004/.002	.004/.003	.005/.003	.005/.003
14										.004/.002	.004/.002	.005/.003	.005/.003
15											.004/.002	.005/.003	.005/.003
16													.005/.003

Metric ISO, Internal Thread Cutting

thread pitch P (mm)	0,50	0,75	1,00	1,25	1,50	1,75	2,00	2,50	3,00	3,50	4,00	4,50	5,00
depth h1	.011	.016	.021	.027	.032	.037	.043	.053	.064	.075	.085	.096	.107
number of passes	4	4	5	6	6	8	8	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.004/-	.006/-	.007/-	.008/-	.009/-	.008/-	.01/-	.01/-	.01/-	.011/-	.01/-	.011/-	.011/-
2	.003/.002	.004/.002	.005/.003	.005/.003	.006/.004	.007/.004	.007/.004	.008/.005	.01/.006	.011/.006	.011/.007	.012/.007	.013/.008
3	.002/.001	.003/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.008/.005	.009/.005	.009/.005	.01/.006
4	.002/.001	.003/.001	.003/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.004	.007/.004	.007/.004	.008/.005	.009/.005
5			.003/.002	.003/.002	.037/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.004	.006/.004	.007/.004	.008/.004
6				.003/.002	.003/.002	.003/.002	.004/.002	.004/.002	.005/.003	.006/.003	.006/.003	.006/.004	.007/.004
7						.003/.002	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003	.006/.004
8						.003/.002	.003/.002	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003
9								.003/.002	.004/.002	.004/.003	.005/.003	.005/.003	.005/.003
10								.003/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003
11									.004/.002	.004/.002	.004/.002	.005/.003	.005/.003
12										.004/.002	.004/.002	.005/.003	.005/.003
13											.004/.002	.004/.002	.005/.003
14											.004/.002	.004/.002	.004/.003
15												.004/.002	.004/.002
16													.004/.002

UN Thread, External Thread Cutting

TPI	24	20	18	16	14	12	11	10	9	8	7	6	5
depth	.026	.031	.034	.038	.044	.051	.056	.061	.068	.077	.088	.102	.123
number of passes	5	6	6	7	9	9	10	11	12	13	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.008/-	.008/-	.009/-	.009/-	.008/-	.009/-	.009/-	.008/-	.008/-	.008/-	.008/-	.009/-	.009/-
2	.006/.003	.006/.004	.007/.004	.007/.004	.007/.004	.009/.005	.009/.005	.009/.005	.01/.006	.011/.006	.012/.007	.014/.008	.016/.009
3	.004/.003	.005/.003	.005/.003	.006/.003	.006/.003	.007/.004	.007/.004	.007/.004	.008/.004	.008/.005	.009/.005	.01/.006	.012/.007
4	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003	.006/.003	.006/.004	.006/.004	.007/.004	.008/.004	.009/.005	.01/.006
5	.003/.002	.004/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.008/.004	.009/.005
6		.003/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.008/.005
7				.004/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004
8					.003/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003	.006/.003	.007/.004
9					.003/.002	.004/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.006/.003	.006/.004
10							.004/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.004
11								.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.006/.003
12									.004/.002	.004/.002	.004/.002	.005/.003	.006/.003
13										.004/.002	.004/.002	.005/.003	.005/.003
14											.004/.002	.004/.003	.005/.003
15												.004/.002	.005/.003
16													.005/.003

UN Thread, Internal Thread Cutting

TPI	24	20	18	16	14	12	11	10	9	8	7	6	5
depth	.023	.027	.030	.034	.039	.045	.049	.054	.060	0.68	.077	.090	.108
number of passes	5	6	6	7	8	9	9	10	11	12	13	14	15
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.008/-	.008/-	.009/-	.009/-	.009/-	.009/-	.01/-	.01/-	.01/-	.01/-	.01/-	.011/-	.012/-
2	.005/.003	.009/.003	.006/.004	.006/.004	.007/.004	.007/.004	.008/.005	.009/.005	.009/.005	.01/.006	.011/.006	.012/.007	.014/.008
3	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.007/.004	.007/.004	.008/.005	.009/.005	.011/.006
4	.003/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003	.006/.003	.006/.003	.006/.004	.007/.004	.008/.004	.009/.005
5	.003/.002	.003/.002	.003/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004	.008/.005
6			.003/.002	.003/.002	.004/.002	.004/.002	.004/.002	.004/.003	.005/.003	.005/.003	.006/.003	.006/.004	.007/.004
7				.003/.002	.003/.002	.004/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.003	.007/.004
8					.003/.002	.003/.002	.004/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003	.006/.004
9						.003/.002	.003/.002	.004/.002	.004/0.002	.004/.002	.004/.003	.005/.003	.006/.003
10								.003/.002	.004/.002	.004/.002	.004/.002	.005/.003	.005/.003
11									.003/.002	.004/.002	.004/.002	.004/.003	.005/.003
12										.003/.002	.004/.002	.004/.002	.005/.003
13											.004/.002	.004/.002	.005/.003
14												.004/.002	.005/.003
15													.004/.003

NPT Thread, External, and Internal Machining

pitch, Gg/Z	27.0	18.0	14.0	11.5	8.0
depth	.003	.044	.057	.070	.100
number of passes	6	8	10	12	14
	values for flank infeed (X/Z)				
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z
1	.007/-	.009/-	.009/-	.009/-	.01/-
2	.006/.003	.007/.004	.008/.005	.008/.005	.01/.006
3	.005/.003	.006/.003	.007/.004	.007/.004	.01/.006
4	.004/.002	.006/.003	.006/.003	.007/.004	.009/.005
5	.004/.002	.005/.003	.006/.003	.006/.004	.008/.005
6	.003/.002	.005/.003	.005/.003	.006/.003	.008/.004
7		.004/.002	.005/.003	.005/.003	.007/.004
8		.003/.002	.004/.002	.005/.003	.007/.004
9			.004/.002	.005/.003	.007/.004
10			.004/.002	.004/.002	.006/.004
11				.004/.002	.006/.003
12				.004/.002	.005/.003
13					.004/.002
14					.004/.002

BSPT Thread, External, and Internal Machining

pitch, Gg/Z	28	19	14	11
depth	.023	.034	.046	BSPT thread
number of passes	5	6	8	10
	values for flank infeed (X/Z)			
order of passes	X/Z	X/Z	X/Z	X/Z
1	.007/-	.009/-	.009/-	.008/-
2	.005/.003	.007/.004	.008/.004	.01/.005
3	.004/.002	.005/.003	.006/.003	.007/.004
4	.003/.002	.005/.002	.005/.003	.006/.003
5	.003/.002	.004/.002	.005/.002	.005/.003
6		.004/.002	.004/.002	.005/.003
7			.004/.002	.005/.002
8			.004/.002	.004/.002
9				.004/.002
10				.004/.002

Trapezoid Thread to DIN 103, External, and Internal Machining

pitch	1.5	2.0	3.0	4.0	5.0
depth	.004	.049	.069	.089	.108
number of passes	6	8	10	12	14
	values for flank infeed (X/Z)				
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z
1	.009/-	.01/-	.01/-	.01/-	.011/-
2	.007/.002	.009/.002	.01/.003	.011/.003	.012/.003
3	.005/.001	.007/.002	.009/.002	.01/.003	.011/.003
4	.005/.001	.006/.002	.008/.002	.009/.002	.01/.003
5	.004/.001	.005/.001	.007/.002	.008/.002	.009/.002
6	.004/.001	.004/.001	.006/.002	.007/.002	.008/.002
7		.004/.001	.006/.002	.007/.002	.008/.002
8		.004/.001	.004/.001	.006/.002	.007/.002
9			.005/.001	.006/.002	.007/.002
10			.004/.001	.005/.001	.006/.002
11				.005/.001	.006/.001
12				.004/.001	.005/.001
13					.005/.001
14					.004/.001

Round Thread to DIN 405, External, and Internal Machining

pitch, Gg/Z	10	8	6
depth	.052	.064	.085
number of passes	8	10	12
	values for flank infeed (X/Z)		
order of passes	X/Z	X/Z	X/Z
1	.008/-	.009/-	.008/-
2	.008/.002	.008/.002	.01/.003
3	.008/.002	.008/.002	.001/.003
4	.007/.002	.007/.002	.009/.002
5	.006/.002	.007/.002	.008/.002
6	.006/.001	.006/.002	.008/.021
7	.005/.001	.006/.002	.007/.002
8	.004/.001	.005/.001	.006/.002
9		.004/.001	.006/.001
10		.006/.001	.005/.001
11			.004/.001
12			.003/.001

Whitworth, External, and Internal Thread Cutting

pitch, TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth	.023	.032	.032	.034	.040	.053	.058	.064	.071	.080	.091	.107	0.128
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.007/-	.008/-	.009/-	.008/-	.009/-	.009/-	.01/-	.009/-	.009/-	.01/-	.008/-	.008/-	.008/-
2	.005/.003	.007/.004	.007/-	.007/.004	.008/.004	.009/.005	.01/5.236	.01/.005	.011/.006	.012/.006	.013/.007	.014/.007	.017/.009
3	.004/.002	.005/.003	.005/.003	.006/.003	.006/.003	.007/.004	.008/.004	.008/.004	.009/.004	.009/.005	.01/.005	.011/.006	.013/.007
4	.003/.002	.004/.002	.005/.002	.005/.002	.005/.003	.006/.003	.006/.003	.007/.004	.007/.004	.008/.004	.008/.004	.009/.005	.011/.006
5	.003/.002	.004/.002	.004/.002	.006/.002	.005/.002	.005/.003	.006/.003	.006/.003	.006/.003	.007/.004	.007/.004	.008/.004	.009/.005
6		.004/.002	.004/.002	.004/.002	.004/.002	.005/.002	.005/.003	.005/.003	.006/.003	.006/.003	.007/.003	.007/.004	.009/.004
7				.003/.002	.004/.002	.004/.002	.005/.002	.005/.003	.005/.003	.006/.003	.006/.003	.007/.004	.008/.004
8				.003/.002	.004/.002	.004/.002	.004/.002	.005/.002	.005/0	.005/.003	.006/.003	.006/.003	.007/.004
9						.038/.002	.004/.002	.004/.002	.005/.002	.005/.003	.005/.003	.006/.003	.007/.004
10								.004/.002	.004/.002	.005/.002	.005/.003	.005/.003	.006/.003
11									.004/.002	.004/.002	.005/.002	.005/.003	.006/.003
12										.004/.002	.004/.002	.005/.003	.006/.003
13											.004/.002	.005/.003	.006/.003
14											.004/.002	.005/.002	.005/.003
15												.005/.002	.005/.003
16													.005/.003

Multitooth Threads, Internal

	ISO metric						ISO UN					Whitworth	NPT		
type	3M	2M	3M	2M	3M	2M	2M	3M	2M	3M	2M	2M	2M	3M	2M
pitch (mm)	1.0	1.5	1.5	2.0	2.0	3.0	—	—	—	—	—	—	—	—	—
TPI	—	—	—	—	—	—	16	16	12	12	8	11	11.5	11.5	8
total depth	.024	.033	.033	.460	.460	.070	.037	.037	.490	.490	.740	.620	.690	.690	.100
1	.013	.015	.020	.020	.028	.022	.017	.022	.022	.030	.023	.029	.023	.032	.035
2	.011	.010	.013	.015	.018	.019	.012	.015	.016	.019	.020	.019	.020	.022	.025
3	—	.008	—	.011	—	.017	.008	—	.011	—	.017	.014	.014	.015	.022
4	—	—	—	—	—	.012	—	—	—	—	.014	—	.012	—	.018

Recommendations for Steel Workpieces (<300 BHN)

catalog number	insert size	TPI profile	total depth — on radius		
			1st pass	2nd pass	3rd pass
NTC-8R/L8EM	8	8 UN	.048	.064	.079
NTC-8R/L8IM	8	8 UN	.047	.061	.074
NTC-8R/L10EM	8	10 UN	.036	.050	.063
NTC-8R/L10IM	8	10 UN	.035	.048	.060
NTC-8R/L12EM	8	12 UN	.030	.041	.052
NTC-8R/L12IM	8	12 UN	.030	.037	.047
NTC-8R/L14EM	8	14 UN	.027	.037	.044
NTC-8R/L14IM	8	14 UN	.024	.031	.041
NTC-8R/L16EM	8	16 UN	.023	.032	.038
NTC-8R/L16IM	8	16 UN	.020	.027	.037
NTC-8R/L18EM	8	18 UN	.019	.026	.034
NTC-8R/L18IM	8	18 UN	.019	.024	.033
NDC-68RDR/L-75M	8	8 round	.058	.065	.073
NDC-61RDR/L-75M	8	10 round	.044	.051	.057
NDC-88RDRD/L-75M	8	8 round	.051	.069	.073
NDC-88VR/L-75M	8	8 NPT	.040	.068	.096
NDC-8115VR/L-75M	8	11.5 NPT	.038	.054	.067
NDN-814VR/L-75M	8	14 NPT	.038	.048	.054

Recommendations for Steel Workpieces (<300 BHN)

catalog number	insert size	TPI profile	total depth — on radius		
			1st pass	2nd pass	3rd pass
NTC-8R/L8EM	8	8 UN	0.05	0.06	0.08
NTC-8R/L8IM	8	8 UN	0.05	0.06	0.07
NTC-8R/L10EM	8	10 UN	0.04	0.05	0.06
NTC-8R/L10IM	8	10 UN	0.04	0.04	0.06
NTC-8R/L12EM	8	12 UN	0.03	0.04	0.05
NTC-8R/L12IM	8	12 UN	0.03	0.04	0.05
NTC-8R/L14EM	8	14 UN	0.03	0.04	0.04
NTC-8R/L14IM	8	14 UN	0.02	0.03	0.04
NTC-8R/L16EM	8	16 UN	0.02	0.03	0.04
NTC-8R/L16IM	8	16 UN	0.02	0.03	0.04
NTC-8R/L18EM	8	18 UN	0.02	0.03	0.03
NTC-8R/L18IM	8	18 UN	0.02	0.02	0.03
NDC-68RDR/L-75M	8	8 round	0.06	0.06	0.07
NDC-61RDR/L-75M	8	10 round	0.04	0.05	0.06
NDC-88RDRD/L-75M	8	8 round	0.05	0.07	0.07
NDC-88VR/L-75M	8	8 NPT	0.04	0.07	0.10
NDC-8115VR/L-75M	8	11.5 NPT	0.04	0.05	0.07
NDN-814VR/L-75M	8	14 NPT	0.04	0.05	0.05

ACME, External

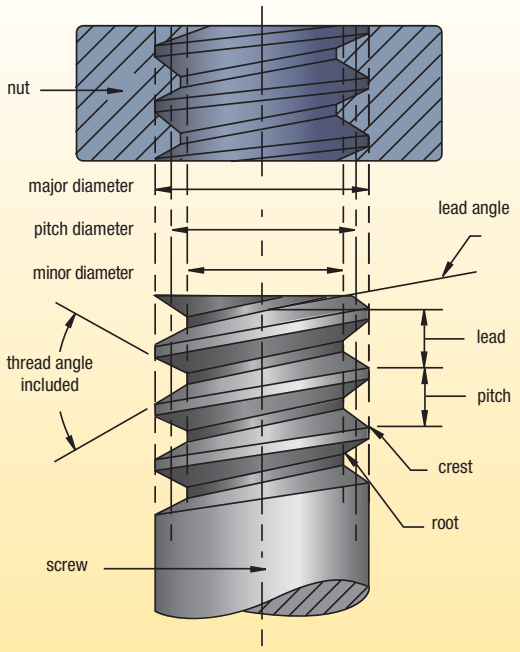
pitch, TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth	.023	.032	.032	.034	.040	.053	.058	.064	.071	.080	.091	.107	0.128
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.039	.041	.050	.063	.074	.095	.112	.138	.180	.265	.008/-	.008/-	.008/-
2	.009	.008	.009	.010	.010	.011	.012	.013	.019	.028	.013/.007	.014/.007	.017/.009
3	.009	.008	.009	.009	.010	.011	.011	.012	.018	.026	.01/.005	.011/.006	.013/.007
4	.007	.007	.007	.009	.009	.010	.010	.011	.016	.023	.008/.004	.009/.005	.011/.006
5	.006	.006	.007	.007	.007	.009	.010	.011	.015	.022	.007/.004	.008/.004	.009/.005
6	.005	.005	.005	.006	.006	.008	.009	.010	.013	.019	.007/.003	.007/.004	.009/.004
7	.003	.004	.005	.005	.005	.007	.008	.010	.011	.017	.006/.003	.007/.004	.008/.004
8		.003	.004	.005	.005	.006	.007	.009	.011	.015	.006/.003	.006/.003	.007/.004
9			.004	.004	.005	.006	.007	.008	.009	.013	.005/.003	.006/.003	.007/.004
10				.004	.005	.006	.007	.008	.009	.013	.005/.003	.005/.003	.006/.003
11				.004	.004	.006	.006	.007	.009	.011	.005/.002	.005/.003	.006/.003
12					.004	.006	.006	.007	.008	.011	.004/.002	.005/.003	.006/.003
13					.004	.005	.006	.006	.007	.010	.004/.002	.005/.003	.006/.003
14						.004	.005	.006	.007	.009	.004/.002	.005/.002	.005/.003
15							.004	.006	.007	.009		.005/.002	.005/.003
16							.004	.006	.006	.008			.005/.003
17								.004	.005	.007	.004/.002	.005/.003	.006/.003
18								.004	.005	.007	.004/.002	.005/.002	.005/.003
19									.005	.006		.005/.002	.005/.003
20										.006			.005/.003

ACME, Internal

pitch, TPI	28	20	19	16	14	12	11	10	9	8	7	6	5
depth	.023	.032	.032	.034	.040	.053	.058	.064	.071	.080	.091	.107	0.128
number of passes	5	6	6	8	8	9	9	10	11	12	14	15	16
	values for flank infeed (X/Z)												
order of passes	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z	X/Z
1	.039	.041	.050	.063	.074	.095	.112	.138	.180	.265	.008/-	.008/-	.008/-
2	.009	.008	.009	.010	.010	.011	.012	.013	.019	.028	.013/.007	.014/.007	.017/.009
3	.009	.008	.009	.009	.010	.011	.011	.012	.018	.026	.01/.005	.011/.006	.013/.007
4	.007	.007	.007	.009	.009	.010	.010	.011	.016	.023	.008/.004	.009/.005	.011/.006
5	.006	.006	.007	.007	.007	.009	.010	.011	.015	.022	.007/.004	.008/.004	.009/.005
6	.005	.005	.005	.006	.006	.008	.009	.010	.013	.019	.007/.003	.007/.004	.009/.004
7	.003	.004	.005	.005	.005	.007	.008	.010	.011	.017	.006/.003	.007/.004	.008/.004
8		.003	.004	.005	.005	.006	.007	.009	.011	.015	.006/.003	.006/.003	.007/.004
9			.004	.004	.005	.006	.007	.008	.009	.013	.005/.003	.006/.003	.007/.004
10				.004	.005	.006	.007	.008	.009	.013	.005/.003	.005/.003	.006/.003
11				.004	.004	.006	.006	.007	.009	.011	.005/.002	.005/.003	.006/.003
12					.004	.006	.006	.007	.008	.011	.004/.002	.005/.003	.006/.003
13					.004	.005	.006	.006	.007	.010	.004/.002	.005/.003	.006/.003
14						.004	.005	.006	.007	.009	.004/.002	.005/.002	.005/.003
15							.004	.006	.007	.009		.005/.002	.005/.003
16							.004	.006	.006	.008			.005/.003
17								.004	.005	.007	.004/.002	.005/.003	.006/.003
18								.004	.005	.007	.004/.002	.005/.002	.005/.003
19									.005	.006		.005/.002	.005/.003
20										.006			.005/.003

Screw Thread Definitions

1. **Major diameter —** The largest diameter of a straight screw thread. This applies to both internal and external threads.
2. **Pitch diameter —** On a straight thread, it is the diameter which passes through the thread profiles at such points which make the thread width of the groove equal to one-half of the basic pitch. On a "perfect thread," this occurs at the point where the widths of the thread and groove are equal.
3. **Thread angle (included) —** The included angle between the individual flanks of the thread form.
4. **Minor diameter —** The smallest diameter of a straight screw thread. This applies to both internal and external threads.
5. **Lead angle —** On a straight thread, the lead angle is the angle created by the helix of the thread at the pitch diameter with a plane perpendicular to the axis.
6. **Lead —** The distance a screw thread advances axially in one revolution. On a single start, the pitch and lead are identical. The lead is equal to the pitch times the number of starts.
7. **Pitch —** The distance from a point on a screw thread to a corresponding point on the next thread measured parallel to the thread axis.
8. **Crest —** The outer most surface of the thread form which joins the flanks.
9. **Root —** The inner most surface of the thread form which joins the flanks.

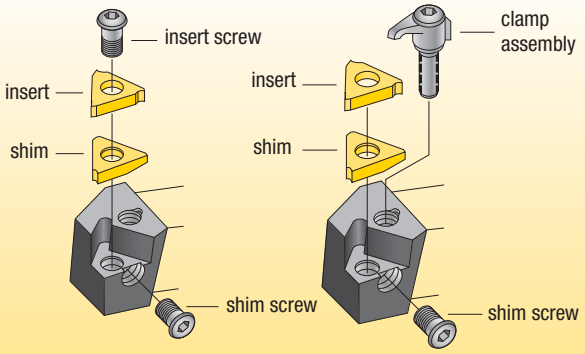


NOTE: Threads per inch (TPI) not shown:
The number of threads per inch measured axially.
The terms pitch and TPI are often used interchangeably.
TPI = 1/pitch

LT Threading Toolholders

In all cases, the proper shim selection is important.

Kennametal toolholders are supplied with a shim for a 1.5° lead angle. Change the shim if your thread is more than 1° different. For more details on proper shim selections, see pages E105–E107.



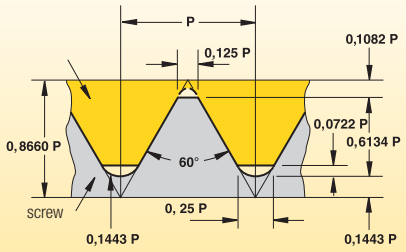
LT Threading Shim Catalog Numbering System

1-1/4	8	UNX	2	A	LH	(21)
Thread Size	Number of threads per inch	Thread form, series, and tolerance formulation symbol	Thread Class **1** = Allowance and tolerance **2** = Allowance and tolerance **3** = Tolerance only **4** = Interference fit	**A** = External thread **B** = Internal thread	**LH** = Left-hand thread (threads are right hand unless specified	Thread Gaging System **21** = **22** = Per ANSI B1.3 **23** =

NOTE: For shims and shim kits, see pages E105–E107.

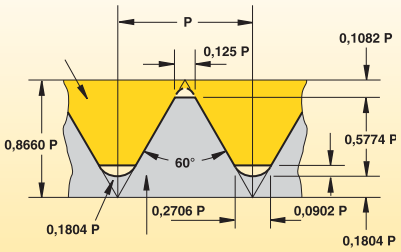
Common Thread Forms

ISO M (Metric) and UN (Unified National)



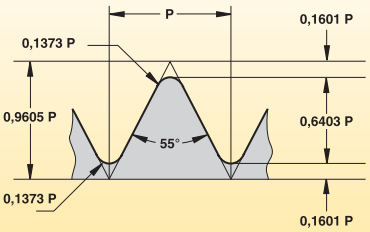
Use: All branches of mechanical industry.

UNJ (controlled root radius)



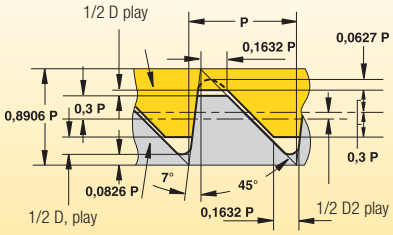
Use: Aircraft and space industry.

Whitworth (BSW)



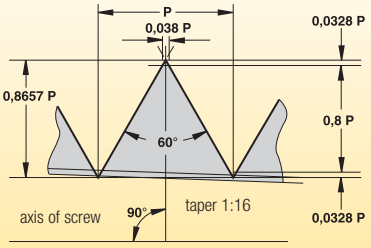
Use: Fittings and pipe couplings for gas, water, and sewer lines (replaced by ISO).

American Buttress



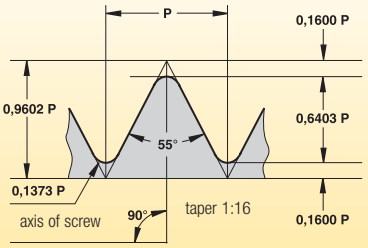
Use: Fittings and pipe couplings.

NPT (American National Pipe Thread)



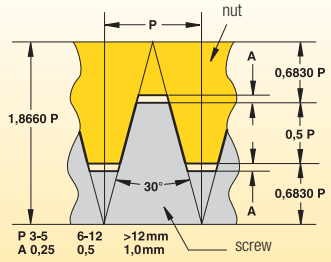
Use: Fittings and pipe couplings.

BSPT (British Standard Pipe Thread)



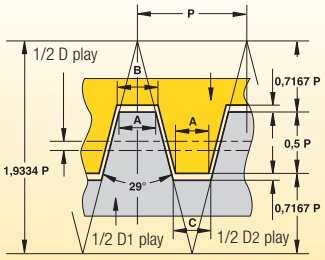
Use: Pipe thread for steam, gas, and water lines.

TR DIN 103



Use: Mechanical industry for motion transmission screws.

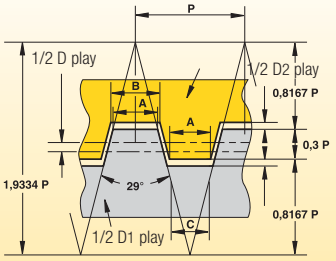
Acme



A = 0,0307 P
B = 0,3707 P—x D play
C = 0,3707 P—(D1 play—D2 play)

Use: Acme-General is used in mechanical industry for motion transmission screws.

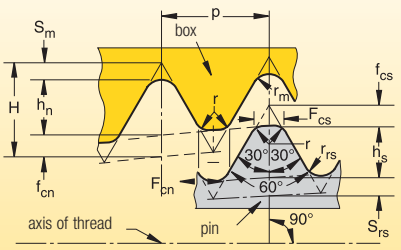
Acme, truncated (Stub)



A = 0,4224 P
B = 0,4224 P—x D play
C = 0,4224 P—(D1 play—D2 play)

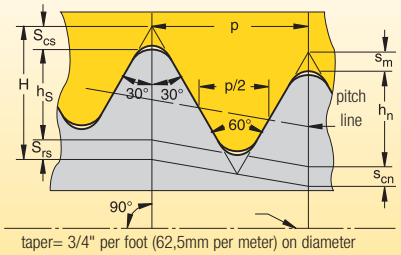
Use: Where normal Acme is too deep.

API Rotary Shoulder Connection



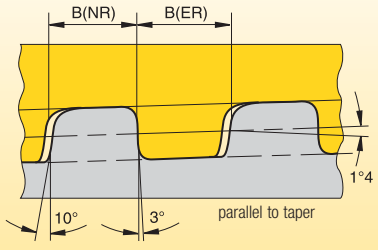
NOTE: Taper shown exaggerated.

API Casing and Tubing Round Thread Form



NOTE: Taper shown exaggerated.

API Buttress



Threading Method and Hand of Tooling

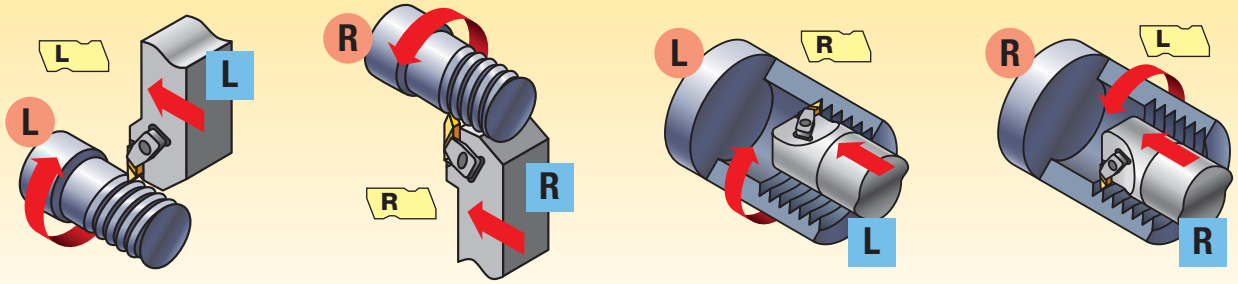
Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.



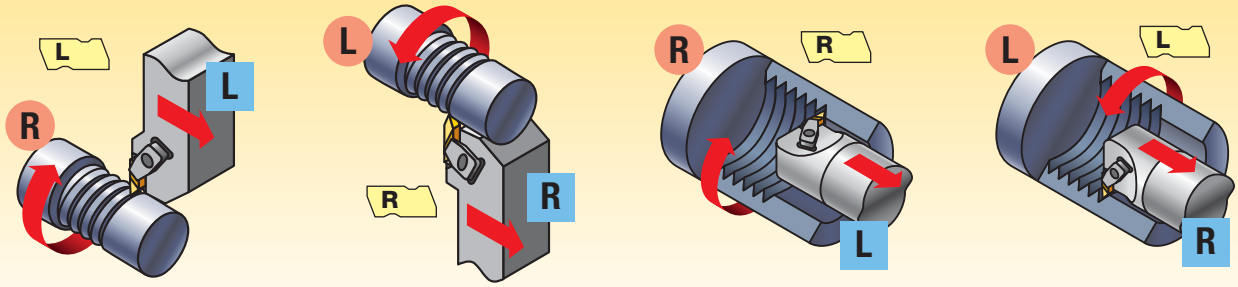
hand of thread | hand of toolholder | hand of insert

Feed Direction Toward the Chuck • Standard Helix



external left-hand thread | external right-hand thread | internal left-hand thread | internal right-hand thread

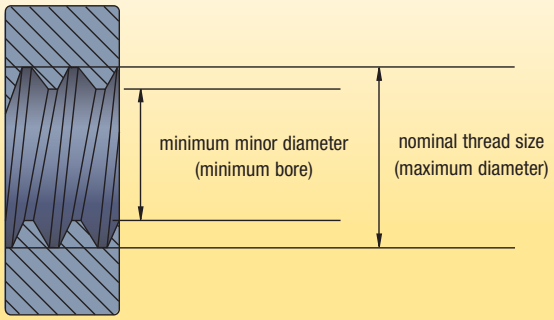
Feed Direction Away from the Chuck • Reverse Helix



external right-hand thread | external left-hand thread | internal right-hand thread | internal left-hand thread

NOTE: Top Notch threading bars require opposite hand insert and clamp.
Right-hand bar requires left-hand insert and clamp.
Left-hand bar requires right-hand insert and clamp.

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.



Inch-Sized 60° V-Threading Limits

internal threading limitations
NT-1, NT-2 V-threading inserts

TPI	nominal thread size		minimum minor diameter (inch)	
	NT-1	NT-2	NT-1	NT-2
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" or larger (.440" or larger with NT-1).

internal threading limitations
NT-3, NT-4 V-threading inserts

TPI	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" or larger.
**NT-4 insert only.

Metric-sized 60° V-Threading Limits

internal threading limitations
NT-1, NT-2 60° V-threading inserts

TPI	nominal thread size		minimum thread diameter (mm)	
	NT-1	NT-2	NT-1	NT-2
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 1mm and less can be cut with an NT-2 insert provided the core thread diameter is 25mm or larger (11mm or larger with NT-1).

internal threading limitations
NT-3, NT-4 60° V-threading inserts

TP	nominal thread size	minimum 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

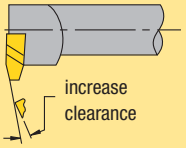
*Thread pitch of 1,5mm and less can be cut provided core thread diameter is 35mm or larger.
**NT-4-insert only.

Acme Threading Limits

internal threading limitations
NA and NAS-2, -3, -4, and -6 Acme threading inserts

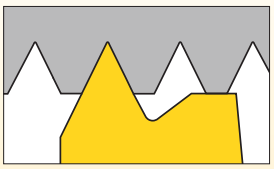
TPI	nominal thread size	minimum thread diameter	
		NT-1	NT-2
2**	5	4.500	114,3
2-1/2**	4-1/2	4.100	104,1
3**	4	3.665	93,1
4	3-1/2	3.250	82,6
5	3	2.800	71,1
6	2-1/2	2.333	59,3
8	2-1/4	2.125	54,0
10	2	1.900	48,3
12	1-3/4	1.667	42,4
14	1-5/8	1.554	39,5
16*	1-1/2	1.438	36,5

*Sixteen threads per inch and finer can be cut provided minor diameter is 36,5mm (1.438") or larger.
**NA-6 insert only.



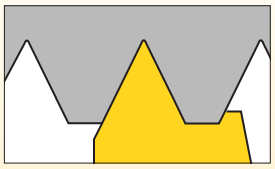
Additional secondary clearance can be ground on leading edge of insert to provide sufficient helical clearance for machining coarser threads and multistart threads. Modified standard inserts may be furnished for machining threads outside of the limits shown.

60° V-Thread Crest Turning Application Data



feed direction

NTC crest turning insert for 12 threads per inch and finer (P ≤2mm)



feed direction

NTC crest turning insert for 11 threads per inch and coarser (P ≥3mm)

"J" thread note for catalog

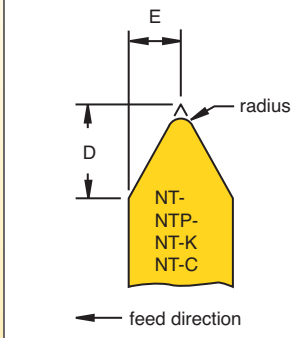
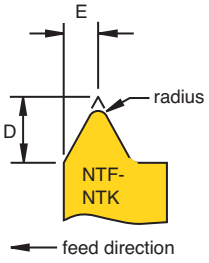
The controlled root radius thread form (SAE8879C) is defined for the external thread only. To machine the corresponding internal thread, choose any insert that will cut a unified class 2B thread, then bore the minor diameter to size. Refer to SAE8879C and MIL-S-8879C and SAEAS8879D for the correct "J" thread minor diameter values.

Controlled Root Radius Specifications for UNJ Threads

insert catalog number	nose radius on insert	thread radius per MIL-S-8879A
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

NOTE: NTC inserts automatically control root to crest dimensions. Therefore, in setting up threading operations with NTC inserts, check the O.D. or I.D. at the thread crest for correct dimensions.

60° V-Thread Application Data

insert description	insert	D** (inch)	E** (inch)	recommended TPI* external	recommended TPI* internal	recommended TP* external	recommended TP* internal
	NT-1	.075	.044	—	24–12	—	1,00–2,00
	NT-2	.113	.075	36–8	20–7	0,70–3,00	1,25–3,50
	NT-2-K	.113	.075	36–8	20–7	0,70–3,00	1,25–3,50
	NTF-2	.062	.040	44–14	24–12	0,60–1,75	1,00–2,00
	NTK-2	.062	.040	44–14	24–12	0,60–1,75	1,00–2,00
	NTP-2	.113	.075	36–8	20–7	0,70–3,0	1,25–3,50
	NT-3	.148	.097	20–6	12–5	1,25–4,00	2,00–5,00
	NT-3-K	.148	.097	20–6	12–5	1,25–4,00	2,00–5,00
	NT-3-C	.148	.097	11–6	6 (only)	2,50–4,00	4,00 (only)
	NT-3-CK	.148	.097	11–6	6 (only)	2,50–4,00	4,00 (only)
	NTF-3	.083	.054	44–10	24–9	0,60–2,50	1,00–2,50
	NTK-3	.083	.054	44–10	24–9	0,60–2,50	1,00–2,50
	NTP-3	.148	.097	20–6	12–5	1,25–4,00	2,00–5,00
	NT-4	.196	.127	20–4	12–4	1,25–6,25	2,00–6,25
	NT-4-K	.196	.127	20–4	12–4	1,25–6,25	2,00–6,25
	NT-4-C	.196	.127	11–4-1/2	6–4-1/2	2,50–5,50	4,00–5,50
	NT-4-CK	.196	.127	11–4-1/2	6–4-1/2	2,50–5,50	4,00–5,50
	NTF-4	.083	.054	44–10	24–9	0,60–2,50	1,00–2,50
	NTK-4	.083	.054	44–10	24–9	0,60–2,50	1,00–2,50
	NTP-4	.196	.127	20–4	12–4	1,25–6,25	2,00–6,25

*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 Forms • Insert Applications 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 4-E/IR4API382	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 4-E/IR4API383	ND-3038R/L	API #56 API #61 API #70 API #77	API #56
V-.050 2" TPF 4 TPI	NDC-4050R/L2 4-E/IRAPI502	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 4-E/IR4API503	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 4-E/IR5API403	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

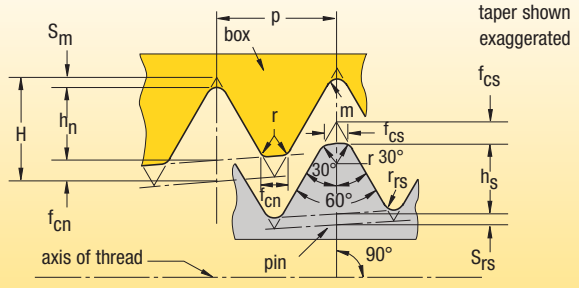
*Minimum box size that can be threaded with a standard Top Notch insert due to minimum bore equipment.

API Thread Forms • Product Thread Dimensions • Rotary Shouldered Connections (Inch)

thread form	taper inch 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	.250
V-.050	3	.215379	.147303	.025000	.043076	.050	—	.025	.015	
V-.050	2	.216005	.147804	.025000	.043201	.050	—	.025	.015	.250

NOTE: All dimensions in inches.

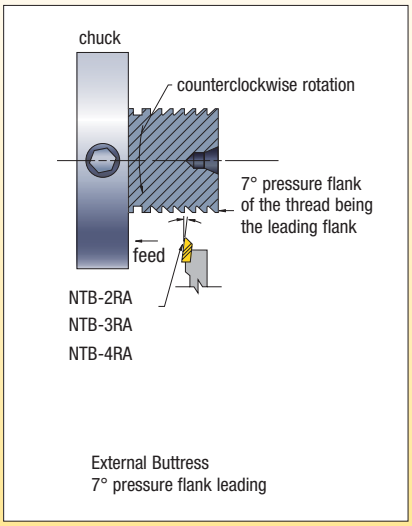
V-.040 and V-.050 Product Thread Form

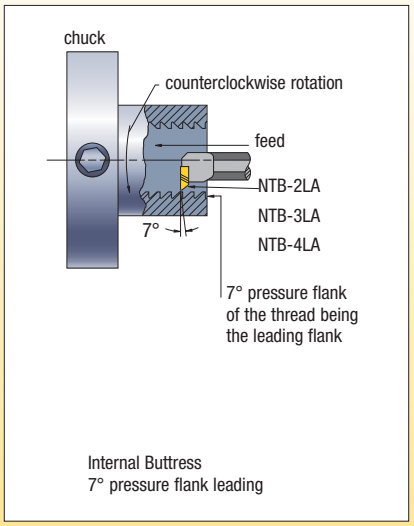


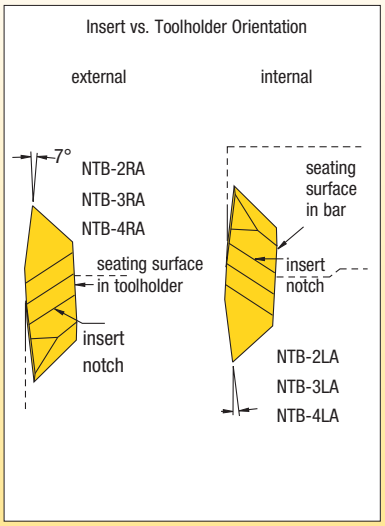
Casing and Tubing Round Thread (Height Dimensions)

thread element		10 TPI p=.1000	8 TPI 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

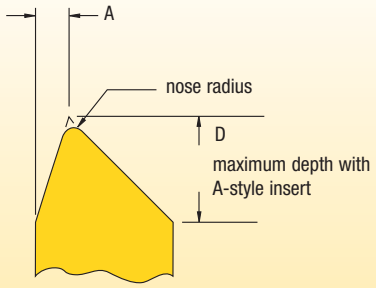
American Buttress (7° Pressure Flank Leading) NTB-A Inserts • Push Type



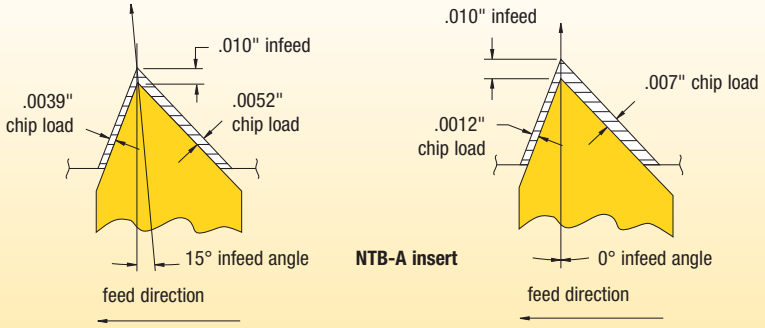




Reference Dimensions



Infeed Angle vs. Chip Load: 7° Pressure Flank Leading



insert	D (inch)	A (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

NOTE: For balanced chip load, 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2A Buttress threading inserts

TPI	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 NTB-4A Buttress threading inserts

TPI	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

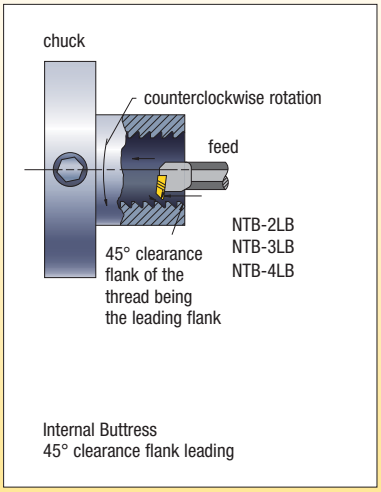
*NTB-4A insert only.
**Can cut 16 or 20 threads per inch provided minor diameter is 1.375" or larger.

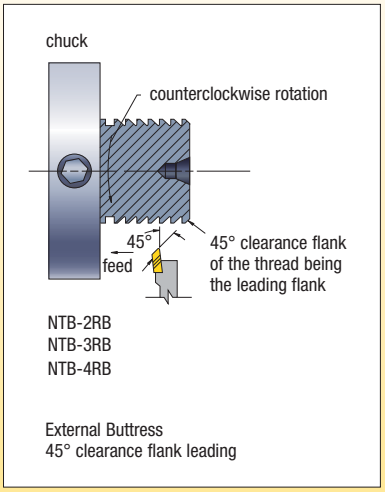
Threads per Inch vs. Maximum Root Radius Chart (Inch)

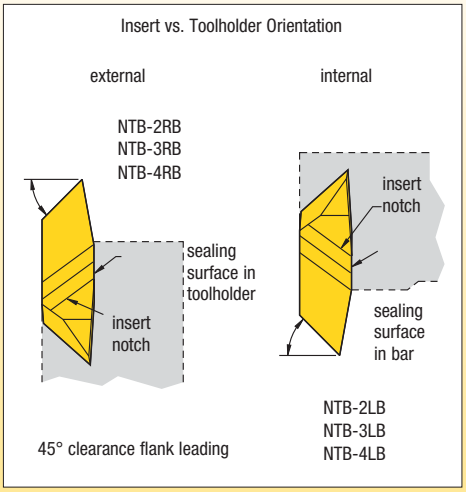
TPI	20	16	12	10	8	6	5	4	3	2-1/2	2	1-1/2	1-1/4	1
maximum root radius	.0036	.0045	.0059	.0071	.0089	0.119	.0143	.0179	.0238	.0286	0.375	.0476	.0572	.0714

NOTE: Special Buttress forms are available upon request.

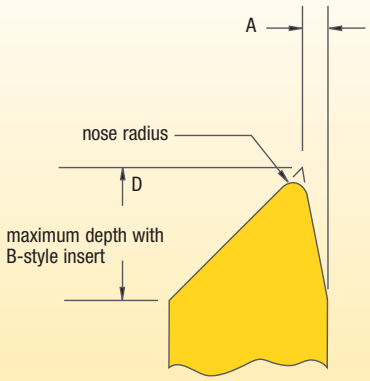
American Buttress (45° Clearance Flank Leading): NTB-B Inserts • PULL-type



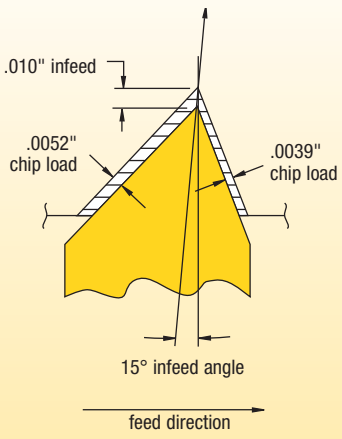


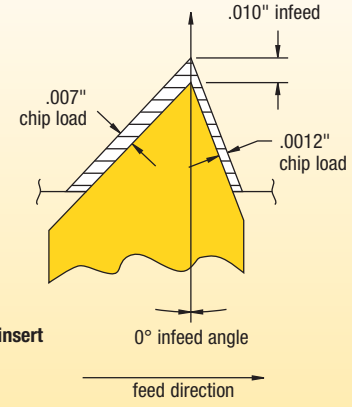


Reference Dimensions



Infeed Angle vs. Chip Load: 45° Clearance Flank Leading





NTB-B insert

insert	D (inch)	A (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

NOTE: For balanced chip load, a reverse 15° infeed angle is suggested.

Internal Threading Limitations

internal threading limitations
NTB-2B Buttress threading inserts

TPI	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 NTB-4B Buttress threading inserts

TPI	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

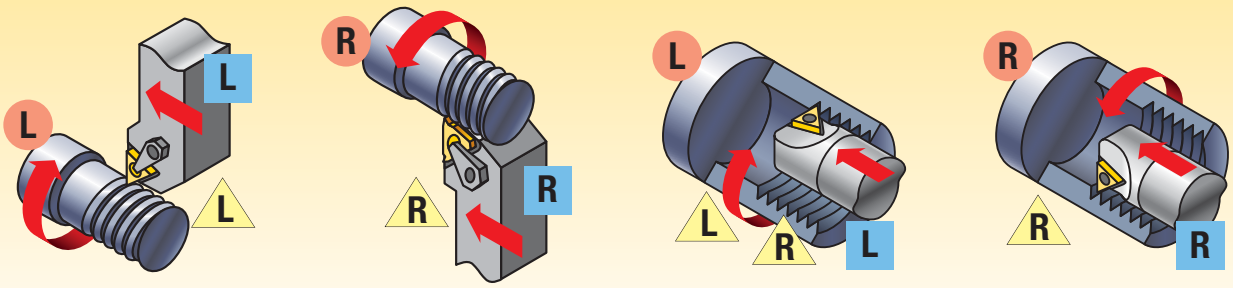
*NTB-4B insert only.

Required Information:

- External/internal operation.
- Spindle rotation/hand of thread.
- Feed direction.

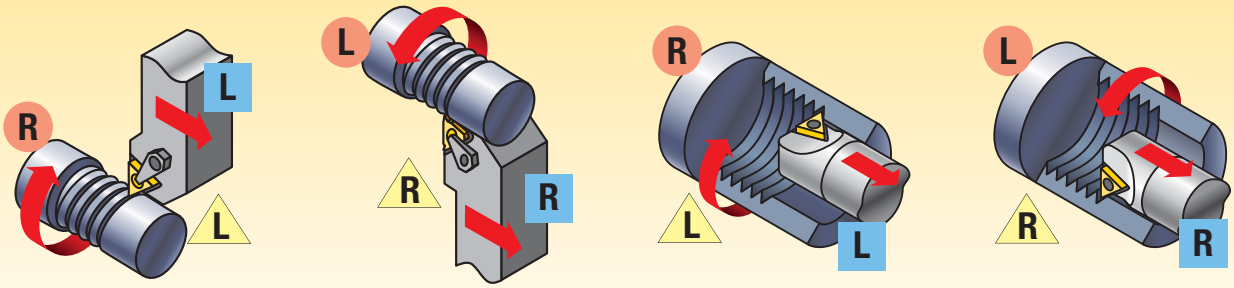


Feed Direction Toward the Chuck • Standard Helix



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

NOTE: Right-hand toolholders and bars use right-hand inserts.
Left-hand toolholders and bars use left-hand inserts.

External Threading Operation Example

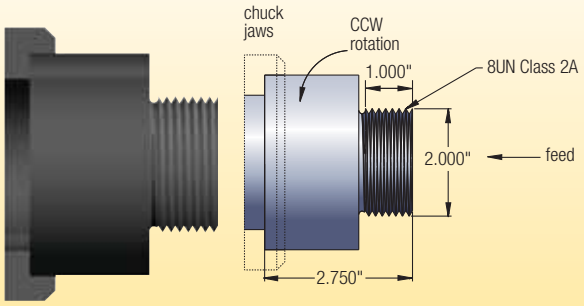
Required Information

From Part Drawing:

material: 316SS, 200 HB
thread form: 8UN Class 2A
operation: external threading
pitch diameter: 2.00" x 1.00" deep

From Machine Setup Data:

tooling: .750" x .750"
spindle rotation: counterclockwise
feed: toward chuck

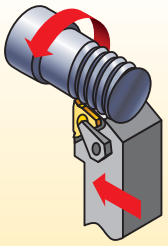


Steps for a Successful Threading Operation

Step 1 • Determine Threading Method

Need to Know:

- Operation (external).
- Spindle rotation (CCW).
  Counterclockwise rotation.
- Feed direction (toward chuck).
- Right-hand toolholder.
- Right-hand insert (ER).
- Standard helix method.



Step 2 • Select Insert



Need to Know:

- Thread form (8 UN Class 2A).
- Hand of insert (right hand — ER).

Choose the High-Performance Solution

catalog number	insert size	KC5010
3ER8UN	3"	●

High-Performance Selection

NOTE: Use insert with largest IC available.

insert: LT-16ER-8UNCB
grade: KC5010
speed: 500 SFM

Step 3 • Select the Grade and Speed

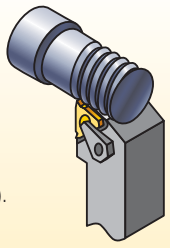
Need to Know:

- Workpiece material (316SS-200HB).
- Operation (external).

Options: Grade and Speed Selection Guidelines

threading operation	stainless steel	
external	general purpose	style
	KC5025	CB
	150–450 SFM	
	high-performance	style
	KC5010	CB
	200–650 SFM	

Step 4 • Select Toolholder



Need to Know:

- External or internal operation (external).
- Pitch diameter to determine minimum bore diameter (N/A).
- Type of tooling — toolholder, boring bar (toolholder).
- Hand of tool (right hand).
- Insert size (3/8").

Options:

catalog number	gage insert	shim
LSASR-123	LT-16ER	SM–YE3
LSSR-123	LT-16ER	SM–YE3

First choice: LSASR-123 holder

Step 5 • Select Shim

Need to Know:

- Thread form — TPI or pitch (8 TPI).
- Pitch diameter (2").
- Helix method (standard).
  See LT shim selection chart.

Select SM-YE3 shim

NOTE: The SM-YE3 shim is supplied with the selected toolholder.

NOTE: Optimize your operation by using a constant infeed or the constant volume method with a minimum infeed of .005 and an infeed angle of 29-1/2°.

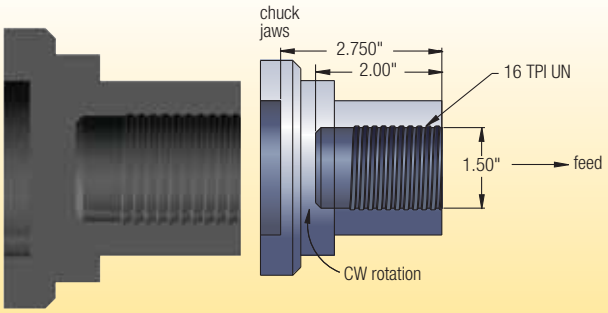
Required Information

From Part Drawing:

material: 4140 steel
thread form: 16 TPI UN
operation: internal threading
pitch diameter: 1.5" x 2" deep

From Machine Setup Data:

tooling: .075" boring bar
spindle rotation: clockwise
feed: away from chuck

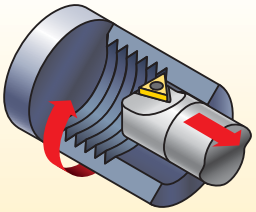


Steps for a Successful Threading Operation

Step 1 • Determine Threading Method

Need to Know:

- Operation (internal).
- Spindle rotation (CW).
  Clockwise rotation.
- Feed direction (away from chuck).
- Left-hand toolholder.
- Left-hand insert (NL).
- Reverse helix method.



Step 2 • Select Insert



Need to Know:

- Thread form (16UN Class 2A).
- Hand of insert (left hand — NL).

Choose the High-Performance Solution

catalog number	insert size	KC5025
LT-11NL-16UN	1/4"	●
LT-16NL-16UN	3/8"	●

High-Performance Selection

NOTE: Use insert with largest possible IC to go into the bore.

insert: LT-16NL-16UN
grade: KC5025
speed: 450 SFM

Step 3 • Select the Grade and Speed

Need to Know:

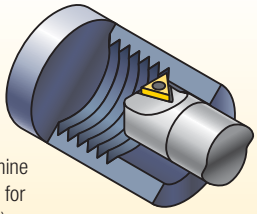
- Workpiece material (4010 steel).
- Operation (internal).

Options: Grade and Speed Selection Guidelines

threading operation	steel
internal	general purpose and high performance
	KC5025
	100–550 SFM

Optimize your operation by using a constant infeed or the constant volume method with a minimum infeed of .005 and an infeed angle of 29-1/2°.

Step 4 • Select Toolholder



Need to Know:

- External or internal operation (internal).
- Pitch diameter to determine minimum bore diameter for internal operations (1.5").
- Type of tooling — toolholder, boring bar (boring bar).
- Hand of tool (left hand).
- Insert size (3/8").

Options:

catalog number	insert size	minimum bore diameter	shim
S1212-LSEL3	3"	.90	SM-YE3
S0812-LSEL2	2"	.65	—

First choice: S1212-LSEL3 bar

Step 5 • Select Shim

Need to Know:

- Thread form — TPI or pitch (16 TPI).
- Pitch diameter (1.5").
- Helix method (reverse).
  See LT shim selection chart.

Select SM-YE3-2N shim

NOTE: Shim supplied with selected boring bar is not correct; order correct shim.

LT Threading Shim Selection Guidelines

The following questions must be answered before a successful threading operation can begin:

A — Select your method of thread cutting:
- Machining toward the chuck (standard helix).
- Machining away from the chuck (reverse helix).

B — Select lead angle and choose shim.

C — Select insert and toolholder size.

D — Select insert grade.

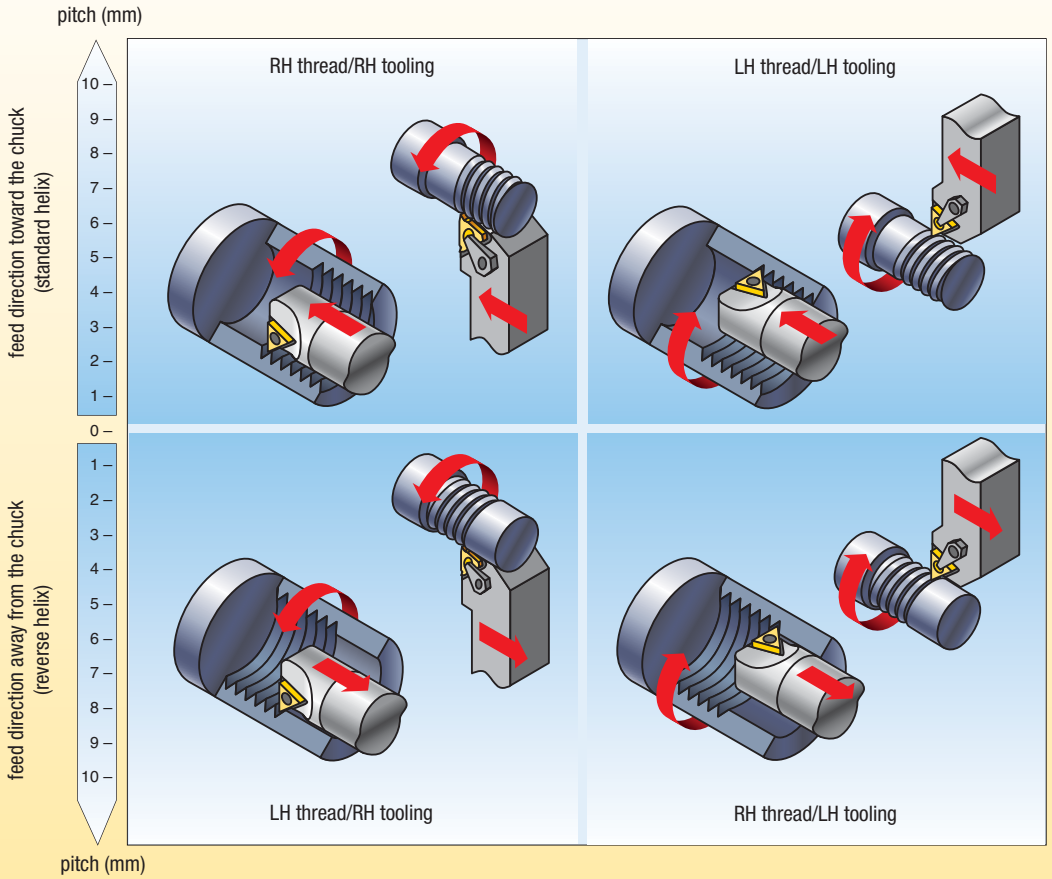
E — Select speed.

F — Select number of thread passes.

G — Select infeed method.

NOTE: When considering method of thread cutting, the part's shape and stability and the flow of chips are determining factors in your decision.

LT Selection Chart



NOTE: For multistart threads, use the lead value instead of the pitch.

Diagram of Thread Lead Angles

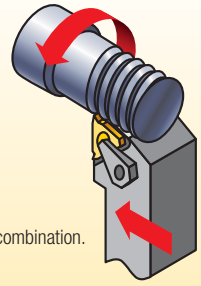
To calculate the lead angle of a given thread, use this formula:

$$\beta = \text{Arctan} \frac{P \bullet S}{\pi \, D_e}$$

ß = thread lead angle
De = effective pitch diameter of thread wear
P = 1/TPI
TPI = threads per inch
S = number of starts
single-start, lead = pitch
multistart, lead = pitch (x) number of starts

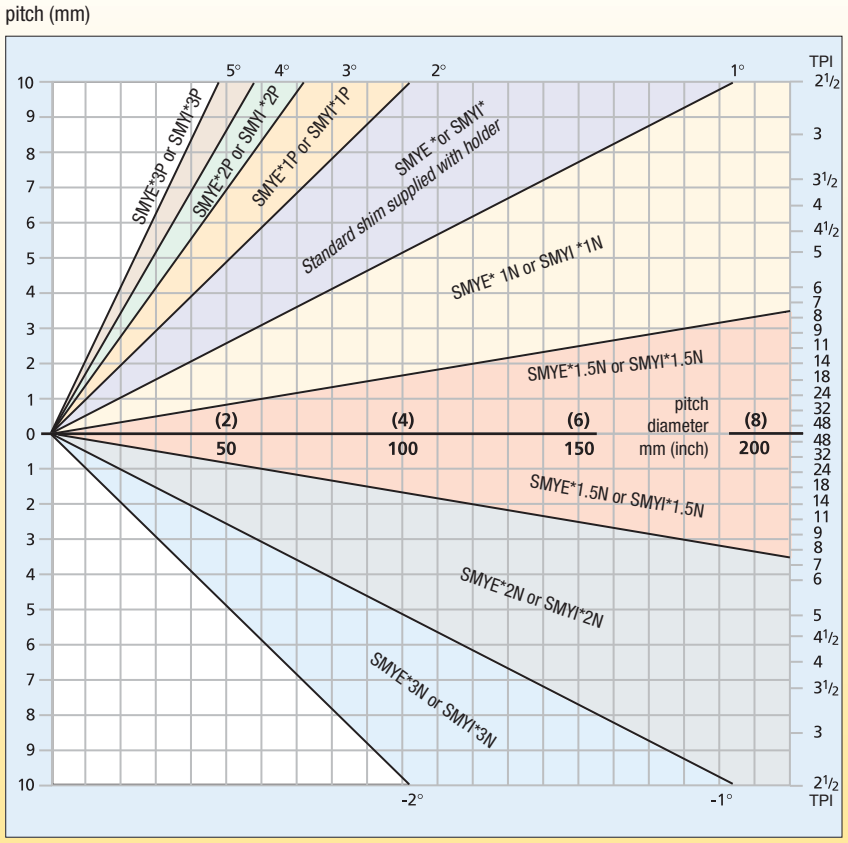
All toolholders are designed with an inclination angle = 1.5°. When turning standard threads with a lead angle of 1–2°, this guarantees adequate clearance at the flanks of the insert's thread tooth. The thread lead angle and the required inclination angle of the insert are given by ß.

Cutting edge height is constant at every shim and insert combination. All toolholders are supplied with 1-1/2° lead angle.



NOTE: Arctan equals Tan-1 (see chart below for approximate lead angles).

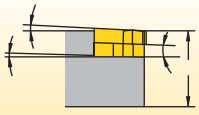
LT Selection Chart



*denotes shim size: 3 = insert size 16 (3/8" D)
4 = insert size 22 (1/2" D)

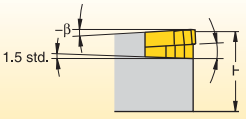
Standard Helix Method:

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 1.5º lead angle.



LT Threading Shim Selection Table • Inch

	toolholder		shim ordering code (inch)							
insert size	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
LT-16 (3/8")	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
LT-22 (1/2")	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		–	–	–	–	0.12–0.31	0.32–0.84	>0.84	0.84–0.32	0.31–0.12
–		0,35	–	–	–	0.12–0.3	0.31–0.84	>0.84	0.84–0.31	0.3–0.12
64		–	–	–	–	0.14–0.35	0.36–0.95	>0.95	0.95–0.36	0.35–0.14
–		0,40	–	–	–	0.14–0.35	0.36–0.96	>0.96	0.96–0.36	0.35–0.14
56		0,45	–	–	–	0.16–0.4	0.41–1.09	>1.09	1.09–0.41	0.4–0.16
–		0,50	–	–	0.11–0.16	0.17–0.44	0.45–1.2	>1.20	1.2–0.45	0.44–0.17
48		–	–	–	0.12–0.17	0.18–0.46	0.47–1.27	>1.27	1.27–0.47	0.46–0.18
44		–	–	–	0.13–0.19	0.2–0.51	0.52–1.38	>1.38	1.38–0.52	0.51–0.2
–		0,60	–	0.1–0.12	0.13–0.2	0.21–0.53	0.54–1.44	>1.44	1.44–0.54	0.53–0.21
40		–	–	0.11–0.13	0.14–0.21	0.22–0.56	0.57–1.52	>1.52	1.52–0.57	0.56–0.22
–		0,70	–	0.12–0.15	0.16–0.23	0.24–0.62	0.63–1.68	>1.68	1.68–0.63	0.62–0.24
36		–	–	0.12–0.15	0.16–0.23	0.24–0.62	0.63–1.69	>1.69	1.69–0.63	0.62–0.24
–		0,75	0.11–0.12	0.13–0.16	0.17–0.25	0.26–0.66	0.67–1.8	>1.80	1.8–0.67	0.66–0.26
32		–	0.12–0.13	0.14–0.17	0.18–0.26	0.27–0.7	0.71–1.9	>1.90	1.9–0.71	0.7–0.27
–		0,80	0.12–0.13	0.14–0.17	0.18–0.26	0.27–0.71	0.72–1.91	>1.91	1.91–0.72	0.71–0.27
28		–	0.14–0.14	0.15–0.19	0.2–0.3	0.31–0.8	0.81–2.17	>2.17	2.17–0.81	0.8–0.31
27		–	0.14–0.15	0.16–0.2	0.21–0.31	0.32–0.83	0.84–2.25	>2.25	2.25–0.84	0.83–0.32
–		1,00	0.15–0.16	0.17–0.21	0.22–0.33	0.34–0.89	0.9–2.39	>2.39	2.39–0.9	0.89–0.34
24		–	0.16–0.17	0.18–0.23	0.24–0.35	0.36–0.94	0.95–2.53	>2.53	2.53–0.95	0.94–0.36
–		1,25	0.19–0.2	0.21–0.27	0.28–0.42	0.43–1.11	1.12–2.99	>2.99	2.99–1.12	1.11–0.43
20		–	0.19–0.21	0.22–0.27	0.28–0.42	0.43–1.13	1.14–3.04	>3.04	3.04–1.14	1.13–0.43
18		–	0.21–0.23	0.24–0.31	0.32–0.47	0.48–1.26	1.277–3.38	>3.38	3.38–1.27	1.26–0.48
–		1,50	0.22–0.25	0.26–0.33	0.34–0.5	0.51–1.34	1.35–3.59	>3.59	3.59–1.35	1.34–0.51
16		–	0.24–0.26	0.27–0.35	0.36–0.53	0.54–1.41	1.42–3.8	>3.80	3.8–1.42	1.41–0.54
–		1,75	0.26–0.29	0.3–0.38	0.39–0.59	0.6–1.56	1.57–4.19	>4.19	4.19–1.57	1.56–0.6
14		–	0.27–0.3	0.31–0.4	0.41–0.61	0.62–1.62	1.63–4.34	>4.34	4.34–1.63	1.62–0.62
13		–	0.29–0.32	0.33–0.43	0.44–0.66	0.67–1.74	1.75–4.68	>4.68	4.68–1.75	1.74–0.67
–		2,00	0.3–0.33	0.34–0.44	0.45–0.67	0.68–1.78	1.79–4.79	>4.79	4.79–1.79	1.78–0.68
12		–	0.32–0.35	0.36–0.46	0.47–0.71	0.72–1.89	1.9–5.07	>5.07	5.07–1.9	1.89–0.72
11.5		–	0.33–0.37	0.38–0.49	0.5–0.74	0.75–1.97	1.98–5.29	>5.29	5.29–1.98	1.97–0.75
11		–	0.34–0.38	0.39–0.51	0.52–0.78	0.79–2.06	2.07–5.53	>5.53	5.53–2.07	2.06–0.79
–		2,50	0.37–0.42	0.43–0.55	0.56–0.84	0.85–2.23	2.24–5.98	>5.98	5.98–2.24	2.23–0.85
10		–	0.38–0.42	0.43–0.56	0.57–0.86	0.87–2.27	2.28–6.08	>6.08	6.08–2.28	2.27–0.87
9		–	0.42–0.47	0.48–0.62	0.63–0.95	0.96–2.52	2.53–6.75	>6.75	6.75–2.53	2.52–0.96
–		3,00	0.45–0.5	0.51–0.66	0.67–1.02	1.03–2.68	2.69–7.18	>7.18	7.18–2.69	2.68–1.03
8		–	0.47–0.53	0.54–0.7	0.71–1.08	1.09–2.84	2.85–7.6	>7.60	7.6–2.85	2.84–1.09
–		3,50	0.52–0.59	0.6–0.77	0.78–1.19	1.2–3.13	3.14–8.38	>8.38	8.38–3.14	3.13–1.2
7		–	0.524–0.61	0.62–0.8	0.81–1.23	1.24–3.25	3.26–8.68	>8.68	8.68–3.26	3.25–1.24
–		4,00	0.6–0.67	0.68–0.89	0.9–1.36	1.37–3.58	3.59–9.57	>9.57	9.57–3.59	3.58–1.37
6		–	0.63–0.71	0.72–0.94	0.95–1.44	1.45–3.79	3.8–10.13	>10.13	10.13–3.8	3.79–1.45
–		5,00	0.75–0.84	0.85–1.11	1.12–1.7	1.71–4.48	4.49–11.97	>11.97	11.97–4.49	4.48–1.71
5		–	0.76–0.86	0.87–1.13	1.14–1.73	1.74–4.55	4.56–12.16	>12.16	12.16–4.56	4.55–1.74
4.5		–	0.84–0.95	0.96–1.26	1.27–1.92	1.93–5.06	5.07–13.51	>13.51	13.51–5.07	5.06–1.93
–		6,00	0.9–1.01	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		–	0.95–1.07	1.08–1.41	1.42–2.16	2.17–5.69	5.7–15.2	>15.20	15.2–5.7	5.69–2.17
inclination angle			4.5	3.5	2.5	1.5	0.5	0.0	-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.


KM MADE IN

Application Specific

Beyond BLAST F2–F12

Fix-Perfect F14–F41

Top Notch Profiling F42–F59

K-Lock F60–F64

Kendex Mini F66–F69

Wheel Reprofiling/Wheelset Truing F70–F87

Axle and Wheel Reconditioning F88–F94

Beyond RU and UP Geometries F95

Wheel and Axle Tooling F96–F97

New Railroad Wheel Manufacturing Tooling F98–F109

Kennametal Select F110–F134



Beyond BLAST™ • The First Through-Insert Coolant Delivery System from Kennametal

We didn't just improve metalcutting technology. We reinvented it.

Introducing Beyond BLAST, a revolutionary insert platform that delivers many of the benefits of high-pressure systems at conventional coolant pressures. Advanced coolant-application technology makes cutting more efficient and effective — while extending tool life. This tool is specifically designed for working with titanium and other high-temp alloys.

Features and Benefits

Higher Productivity, Extended Tool Life

- Increased tool life up to 300%, depending on the insert geometry and cutting conditions.
- Significant productivity and tool life increase in titanium machining.
- Higher metal removal rates and reduced cycle time.
- Chipbreaker design in combination with Precision Coolant Technology (PCT) provides excellent chip control and workpiece finish.

Versatility

- Ideal for applications where productivity or tool life is limited due to excess generated heat.
- Offered as a standard item with engineered solution capabilities.
- Provides increased performance with high-pressure or low-pressure coolant delivery systems.

More than just the right tool — the ultimate solution. That's **Beyond BLAST.™**

That's **Different Thinking.**



A Simple Observation, a Revolutionary Concept

We took an entirely different approach to machining high-temperature alloys. We determined that the most effective way to deliver coolant would be to channel it through the insert — ensuring that it hits exactly where it does the most good. That means more efficient coolant delivery at a fraction of the cost of high-pressure coolant systems.

By precisely controlling coolant application, Beyond BLAST™ allows you to lower your energy consumption, saving you even more money and reducing your impact on the environment.

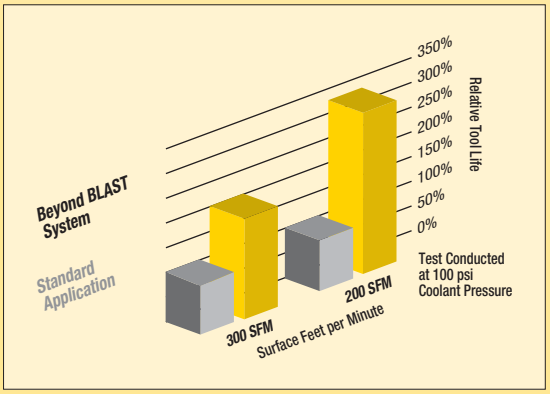
*To learn more, **scan here**.*
For instructions on how to scan, please see page xxix.

Beyond BLAST System

- Beyond BLAST delivers coolant directly and precisely to the cutting edge.
- Effective thermal management, higher speeds and reduced cycle times can be achieved.
- Delivers many of the benefits of high-pressure systems at low pressure.
- Provides increased performance with high-pressure or low-pressure coolant delivery systems.

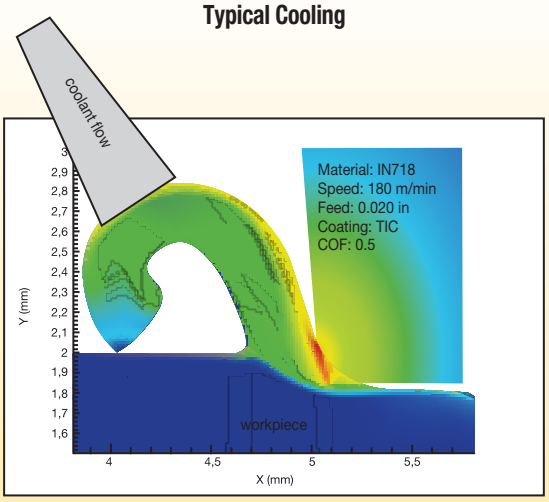
Beyond BLAST for turning increases tool life by up to 300% compared with conventional coolant delivery systems.





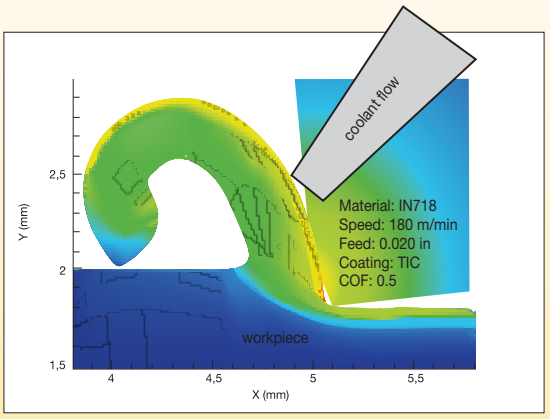
Coolant Application

Typical Cooling



Typical cooling applications often miss the point of highest heat, generated where the tool shears the material. Hitting chips after they have formed proves typical cooling applications can even work at cross-purposes by forcing chips back into the cut, accelerating tool wear. Part of the problem is that the coolant-delivering nozzle is located relatively far from the workpiece.

Through Insert Cooling



Beyond BLAST with Precision Coolant Technology (PCT)

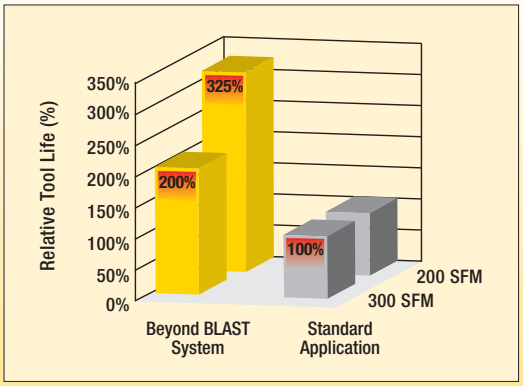
With Beyond BLAST, coolant is delivered through the insert, at the interface of the tool and the workpiece material, offering the best of both worlds.

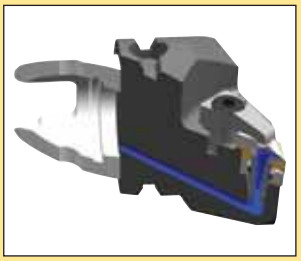
Beyond BLAST with Precision Coolant Technology (PCT) features through-insert cooling. It delivers coolant much closer to the tool/chip interface. Coolant pressure remains adjustable. Since the coolant is delivered through the insert, coolant delivery is more reliable and controlled, significantly reducing temperatures at the point of the cut.

Application Data

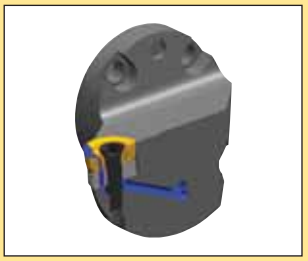
The illustrations below show Beyond BLAST turning inserts and the coolant delivery path through the turning holder and insert.

In tests involving titanium turning, Beyond BLAST inserts at 100 psi showed 75% improvement in tool life over the same inserts with flood coolant at 100 psi. In a different test to evaluate the influence of coolant pressure, tool life for Beyond BLAST at 100 psi was nearly that of identical insert geometries at 1,000 psi, delivering cutting conditions and longer tool life on par with expensive, custom high-pressure coolant delivery systems at significantly lower cost.











	Test 1 62 m/min (200 SFM)	Test 2 93 m/min (300 SFM)
Cutting Conditions and Parameters • CNMG432MBB • KCU10™		
Workpiece	Ti6Al4V (Titanium)	Ti6Al4V (Titanium)
Hardness	42–46 Rc hardness	42–46 Rc hardness
Cutting fluid (100 psi)	Water-based synthetic	Water-based synthetic
Cutting speed (vc)	62 m/min (200 SFM)	93 m/min (300 SFM)
Feed rate (f)	0,2 mm/rev (.008 IPR)	0,2 mm/rev (.008 IPR)
Depth of cut	1,27mm (.05")	1,27mm (.05")
Tool life Beyond BLAST versus Standard	3,2x	2x
Result:	**Over 3x tool life**	**Double the tool life**

Product Portfolio

- KM50TS holders.
- Inch and metric square shanks.
- C- and R-shaped inserts.
- Geometries: FBB, MBB, RBB, ELF.
- Grades: KU10, KCU10.

C-Style



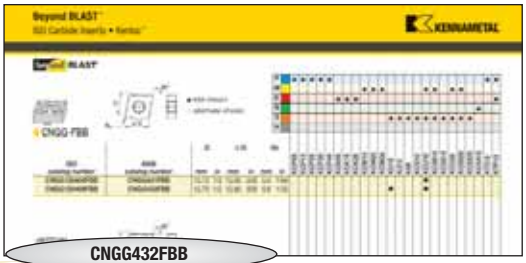


R-Style





Beyond BLAST Identification System



CNGG432FBB
RCGX64ELF

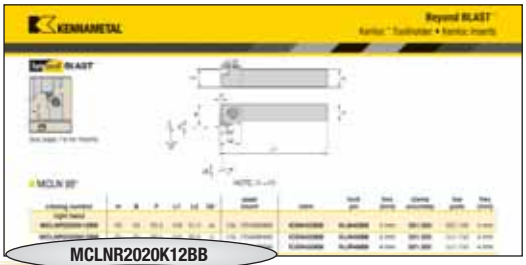
Inserts • C-Style

C	N	G	G	4	3	2	F	BB
Insert Shape	Clearance Angle	Tolerance Class	Insert Features	Size	Thickness	Corner Radius "Rε"	Chip Control	Beyond BLAST

Inserts • R-Style

R	C	G	X	6	4	EL	F	
Insert Shape	Clearance Angle	Tolerance Class	Geometry and Clamping Type	Size	Thickness	Corner Configuration	Cutting Edge Form	

Application Specific



MCLNR2020K12BB
MCLNR16DBB

Toolholders • ISO

M	C	L	N	R	2020	K	12	BB
Insert Holding Method	Insert Shape	Tool Style	Clearance Angle	Hand of Tool	Shank Dimensions	Tool Length	Insert Size	Beyond BLAST

Toolholders • ANSI

M	C	L	N	R	16	D	BB	
Insert Holding Method	Insert Shape	Tool Style	Clearance Angle	Hand of Tool	Shank Dimensions	Qualified Surface Length	Beyond BLAST	

Step 1 • Select the insert geometry

beyond

Negative Inserts



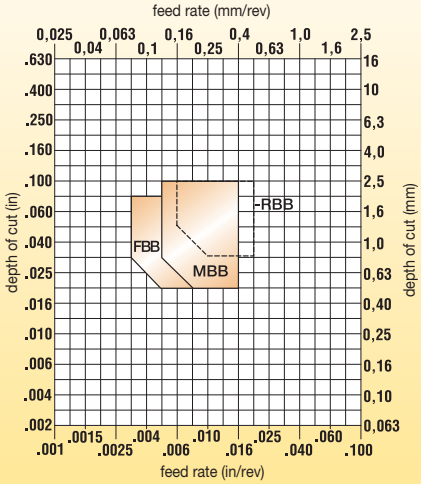
-RBB
Roughing



-MBB
Medium Machining



-FBB
Finishing



NOTE: Maximum depth of cut is 2,5mm (.100").

Step 2 • Select the grade

cutting condition		Negative Insert Geometry -RBB	-MBB	-FBB
heavily interrupted cut		KCU10	KCU10	KCU10
lightly interrupted cut		KCU10	KCU10	KCU10
varying depth of cut, casting, or forging skin		KU10/KCU10	KU10/KCU10	KU10/KCU10
smooth cut, pre-turned surface		KU10/KCU10	KU10/KCU10	KU10/KCU10

Step 3 • Select the cutting speed

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

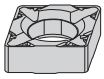
material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S3	KU10		◁▷								40	125
	KCU10			◁▷							70	225

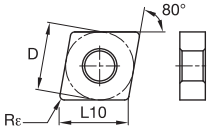
Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S4	KU10		◁▷								45	150
	KCU10			◁▷							70	225

beyond BLAST™

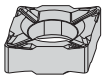
● first choice
○ alternate choice

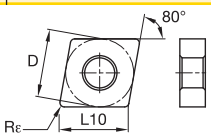




CNGG-FBB

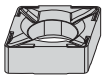
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNGG120404FBB	CNGG431FBB	12,70	1/2	12,90	.508	0,4	1/64																●								
CNGG120408FBB	CNGG432FBB	12,70	1/2	12,90	.508	0,8	1/32												●				●								

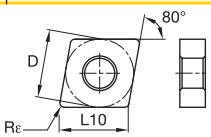




CNMG-MBB

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120404MBB	CNMG431MBB	12,70	1/2	12,90	.508	0,4	1/64																●								
CNMG120408MBB	CNMG432MBB	12,70	1/2	12,90	.508	0,8	1/32												●				●								





CNMG-RBB

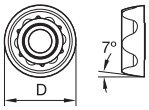
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	Rε mm	Rε in	KCP05	KCP10	KCP25	KCP30	KCP40	KCK05	KCK15	KCK20	KCM15	KCM25	KCM35	KU10	K313	K68	KCS10	KCU10	KC5010	KC5510	KCU25	KC5025	KC5525	KC5410	KT315	KTP10
CNMG120408RBB	CNMG432RBB	12,70	1/2	12,90	.508	0,8	1/32												●				●								

Application Specific

beyond BLAST™

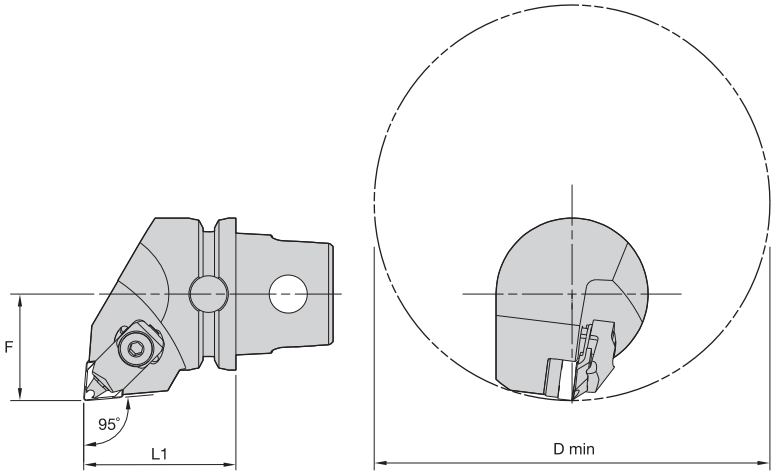
● first choice
○ alternate choice





■ RCGX-LF

| | | |



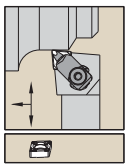


KM QUICK CHANGE beyond BLAST™

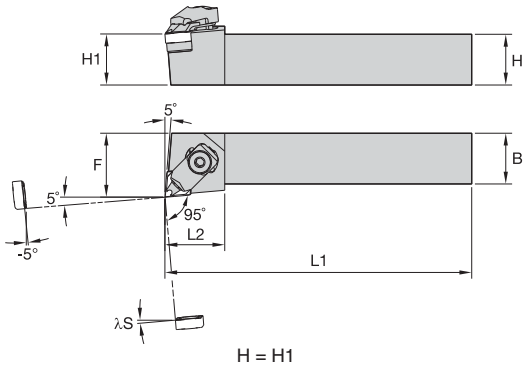
MCLN 95°

order number	catalog number	L1 mm	L1 in	F mm	F in	D min mm	D min in	gage insert	shim	lock pin	clamp assembly	top plate	kg	lbs
	right hand													
4098740	**KM50TSMCLNR12BB**	50	1.969	35	1.378	130	5.118	CN..120408RBB/CN..432RBB	**ICSN433BB**	**KLM48BB**	**551.350**	557.150	0,33	1.45
	left hand													
4098741	**KM50TSMCLNL12BB**	50	1.969	35	1.378	130	5.118	CN..120408RBB/CN..432RBB	**ICSN433BB**	**KLM48BB**	**551.350**	557.150	0,33	1.45

Application Specific



See page F8 for inserts.

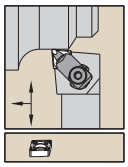


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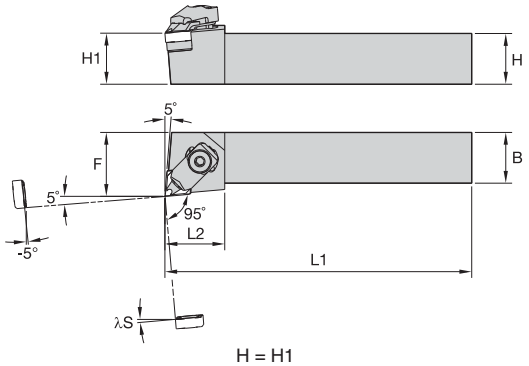
beyond BLAST™

MCLN 95°

catalog number	H	B	F	L1	L2	λS°	gage insert	shim	lock pin	hex (mm)	clamp assembly	top plate	hex (mm)
right hand													
MCLNR2020K12BB	20	20	25,5	128	31,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNR2525M12BB	25	25	32,5	153	32,0	-5	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNR3232P12BB	32	32	40,5	173	37,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
left hand													
MCLNL2020K12BB	20	20	25,5	128	31,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNL2525M12BB	25	25	32,5	153	32,0	-5	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNL3232P12BB	32	32	40,5	173	37,2	-6	CN..120408RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm



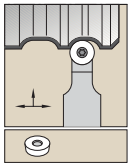
See page F8 for inserts.



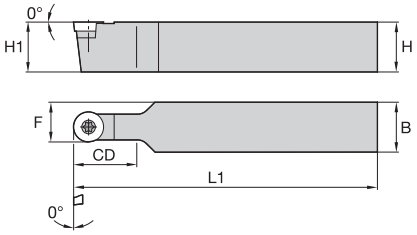
H = H1

MCLN -5°

catalog number	H	B	F	L1	L2	λS°	gage insert	shim	lock pin	hex (mm)	clamp assembly	top plate	hex (mm)
right hand													
MCLNR164DBB	1.00	1.00	1.250	6.00	1.17	-5	CN..432RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNR204DBB	1.25	1.25	1.500	6.00	1.17	-6	CN..432RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
left hand													
MCLNL164DBB	1.00	1.00	1.250	6.00	1.17	-5	CN..432RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm
MCLNL204DBB	1.25	1.25	1.500	6.00	1.17	-6	CN..432RBB	**ICSN433BB**	**KLM48BB**	4 mm	**551.350**	557.150	4 mm



See page F9 for inserts.

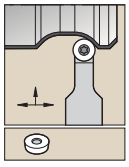


H = H1

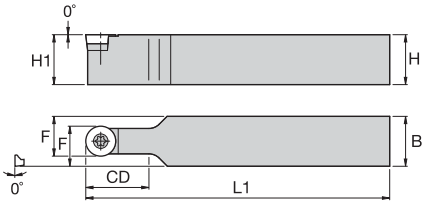
beyond BLAST™

SRDC

catalog number	H	B	F	L1	CD	gage insert	shim	insert screw	wrench size insert screw
left hand									
SRDCN3232P19BB	32	32	25,5	173	50,8	RCGX190600ELF	**SM907**	**MS2246**	T25



See page F9 for inserts.



H = H1

SROC

catalog number	H	B	F	L1	CD	gage insert	shim	insert screw	wrench size insert screw
left hand									
SROCN206BB	1.25	1.25	1.000	6.00	2.00	RCGX64ELF	**SM907**	**MS2246**	T25

Looking for a product that's not shown in this catalog?
Check the Kennametal website!



Turning

Online product catalog available 24/7

Visit **http://www.kennametal.com/turning/** to browse our electronic catalog any time you're looking for Kennametal's best tooling solutions. It's fast, free, and always available. The online e-catalog is updated weekly with products and solutions for milling, turning, holemaking, and tooling systems applications.

KENNAMETAL



The Fix-Perfect™ Precision Ground Insert Program Goes Above and Beyond™!

Primary Application

The breakthrough performance characteristics of these precision ground inserts enable outstanding indexing accuracy and excellent chip flow when machining steel, cast iron, and stainless steel workpiece materials.

Fix-Perfect Beyond Inserts are the ideal solution to machining operations in a multitude of industries, including fluid power, energy, automotive, heavy equipment, and general engineering applications.

Features and Benefits

Features	Functions
Tangential design.	Stable system.
Rigid clamping system.	Very stable clamping system and quick and easy cutting edge switch.
Up to eight cutting edges (protected by pocket seat).	Use up to eight edges per insert.
Positive geometry.	Very low cutting forces and excellent chip control.
Precision ground insert.	Better indexing accuracy.

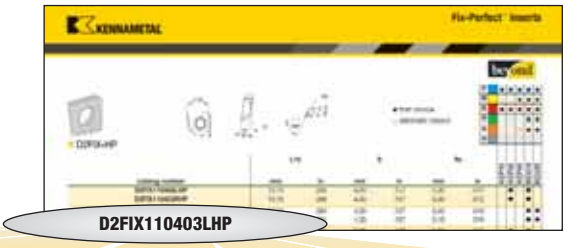




Benefits

- Process reliability and high productivity.
- Process reliability, high productivity, and reduced machine downtime.
- Higher productivity.
- Low vibrations, smooth cut, silent cut, no workpiece deformation, and high surface quality.
- Process reliability.

Beyond™ Identification System

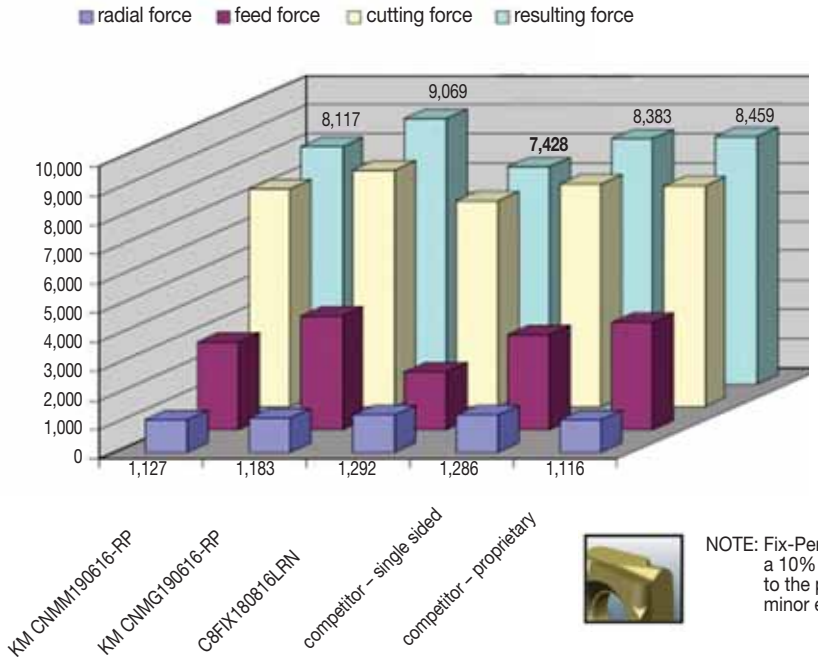


D	2	FIX	11	04	03	L	HP
Insert Shape (corner angle)	Number of Cutting Edges	Proprietary System	Cutting Edge Length	Thickness	Corner Radius	Hand of Insert	Chip Control

Application Specific

New Beyond Fix-Perfect Naming System

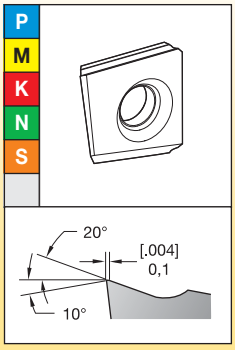
old catalog number	description	new catalog number
1.21101R151	insert with 2 positive cutting edges, corner radius e = 56°	D2FIX110403RMS

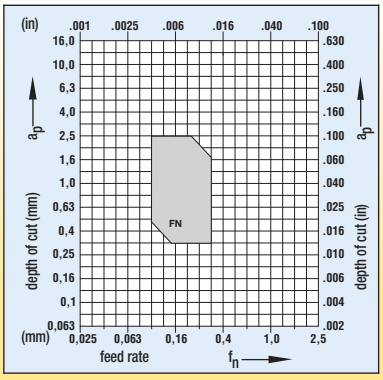


NOTE: Fix-Perfect achieves at least a 10% lower cutting force due to the positive rake and sloped minor edge.

Finishing

D2FIX-FN

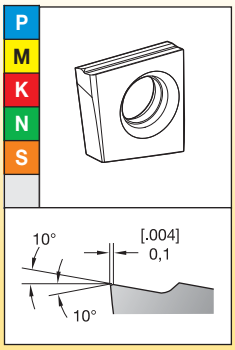


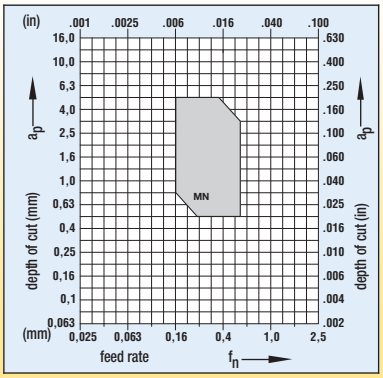


P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

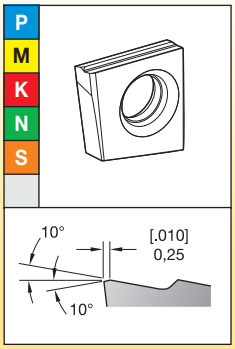
Medium Machining

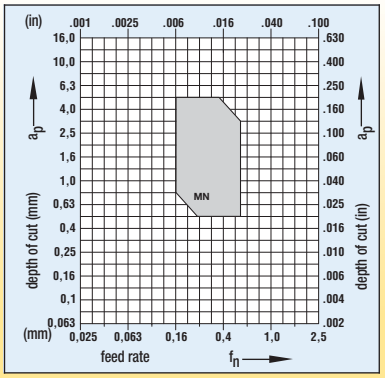
C2FIX15-MN



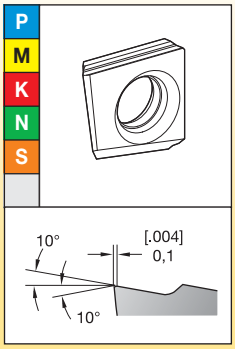


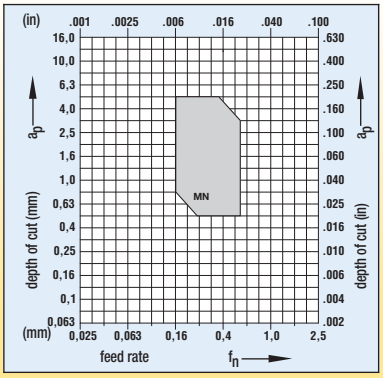
C2FIX18-MN



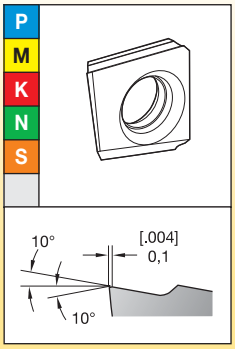


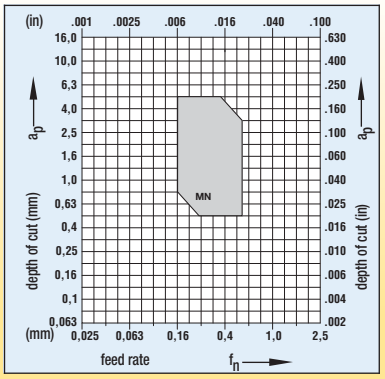
D2FIX-MN



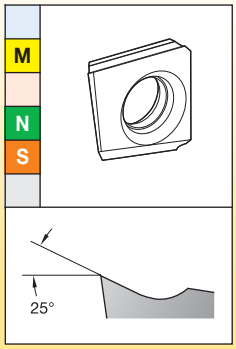


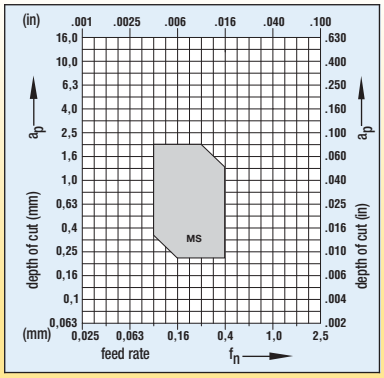
K2FIX-MN



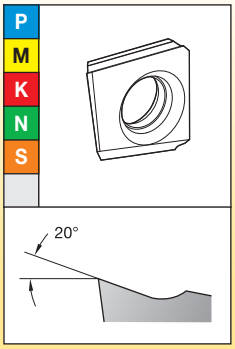


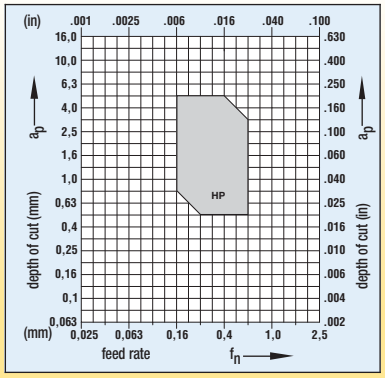
D2FIX-MS





D2FIX-HP





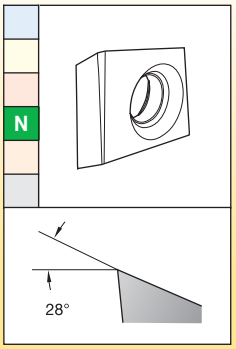
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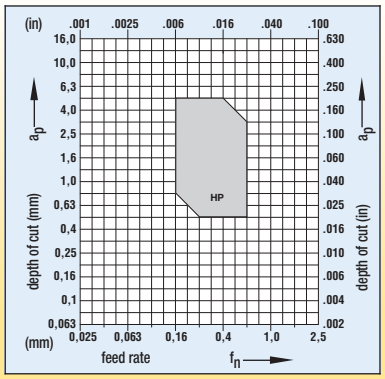
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Medium Machining

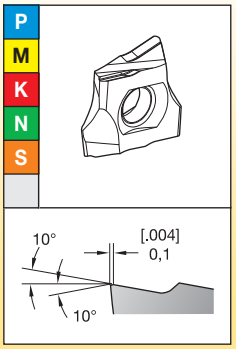
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

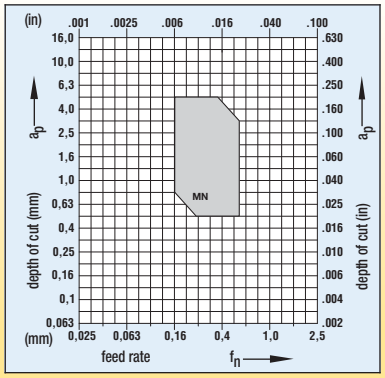
E2FIX-HP



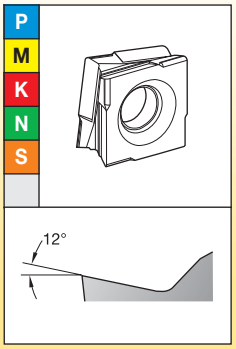


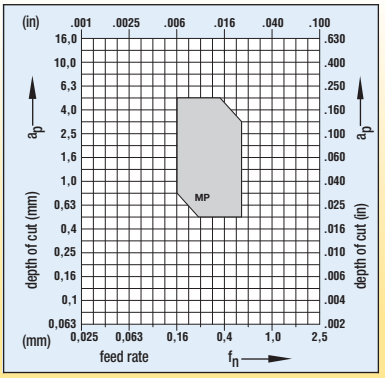
D4FIX-MN





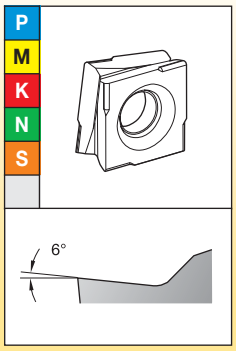
C8FIX-MP

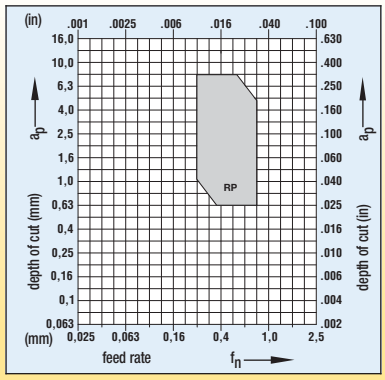




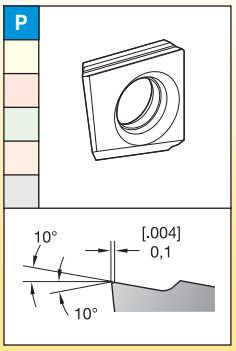
Roughing

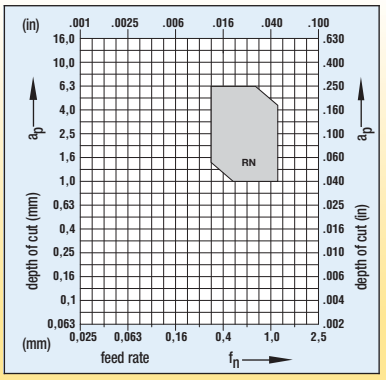
C8FIX-RP



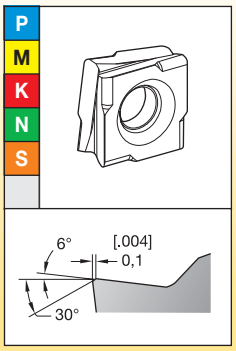


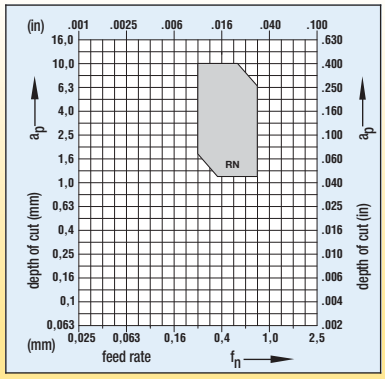
D2FIX-RN



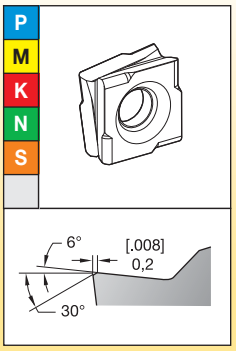


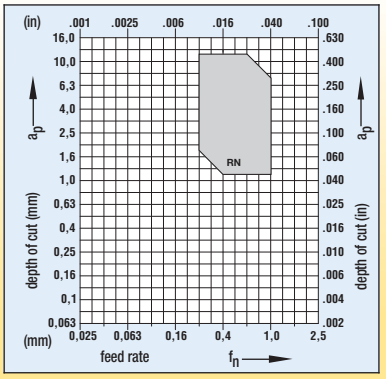
C8FIX15-RN





C8FIX18-RN

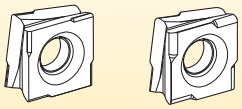




Select the Insert Geometry

8-Edged Inserts

Roughing
Interrupted cut and/or heavy scale
USE: -RP OR -RN

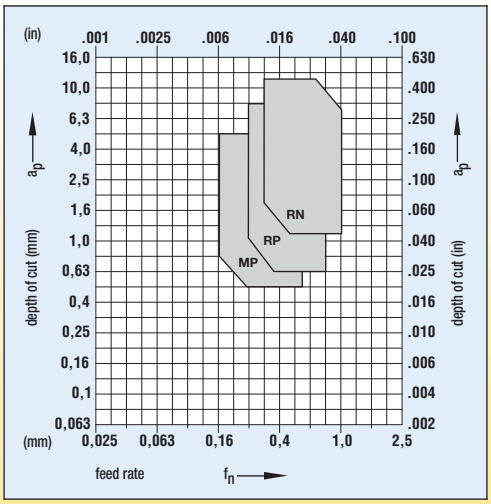


-RP -RN

Medium Turning
Slightly interrupted cut and/or slight scale
USE: -MP

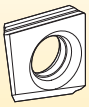


-MP



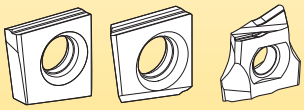
2- and 4-Edged Inserts

Roughing
Interrupted cut and/or heavy scale
USE: -RN



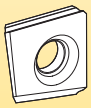
-RN

Medium Turning
Slightly interrupted cut and/or slight scale
USE: -MN

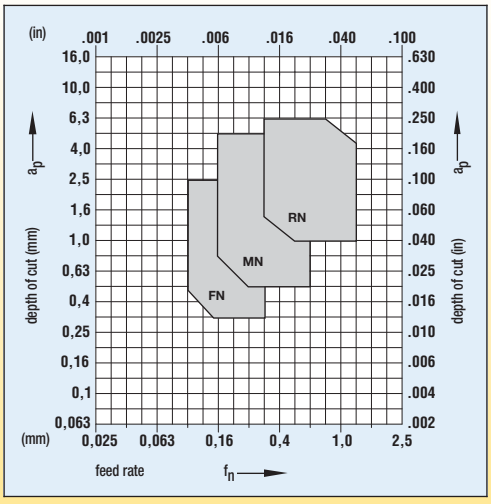


-MN

Finishing
Non-interrupted cut, no scale
USE: -FN

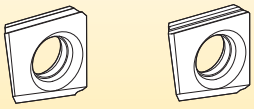


-FN

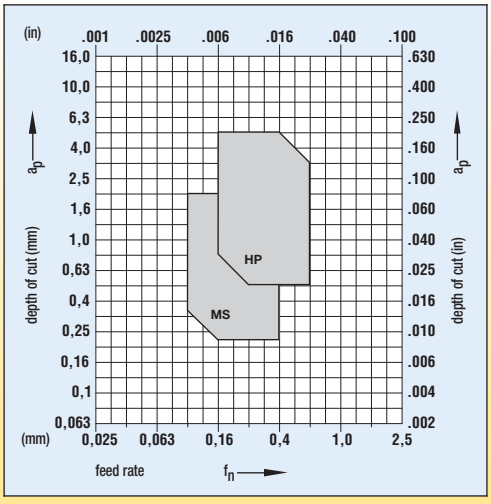


2-Edged Inserts, High Positive

Medium Turning
Slightly interrupted cut and/or slight scale
USE: -HP OR -MS



-HP -MS



Select the Grade

	P	M	K	N	S	H
heavy interrupted	KCP40/KCU25	KCU25	KCP25/KCU25	KCU25	KCU25	—
lightly interrupted	KCP25/KCU25	KCU25	KCP25/KCU25	KCU25	KCU25	—
varying depths of cut	KCP10/KCU10	KCU10	KCP10/KCU10	KCU10	KCU10	KCU10
smooth	KCP10/KCU10	KCU10	KCP10/KCU10	KCU10	KCU10	KCU10

Select the Cutting Speed

Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	90 (300)	120 (400)	150 (500)	185 (617)	215 (717)	245 (800)	275 (900)	300 (1000)	m/min	SFM
P	KCP40				◁▷						150	500
	KCU10						◁▷				200	650
	KCP25						◁▷				200	650
	KCP10							◁▷			250	800

Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	45 (150)	70 (233)	90 (300)	115 (383)	140 (467)	165 (550)	185 (617)	210 (700)	230 (767)	m/min	SFM
M	KCP40					◁▷					140	450
	KCU25						◁▷				165	500
	KCU10							◁▷			185	600

Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (750)	275 (900)	320 (1050)	360 (1200)	410 (1350)	460 (1500)	m/min	SFM
K	KCU25		◁▷								165	500
	KCU10			◁▷							180	600
	KCP25				◁▷						230	750
	KCP10					◁▷					260	850

Non-Ferrous — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	150 (500)	225 (750)	300 (1000)	380 (1267)	460 (1533)	535 (1783)	610 (2033)	685 (2283)	760 (2533)	m/min	SFM
N	KCU10					◁▷					460	1500

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◁▷

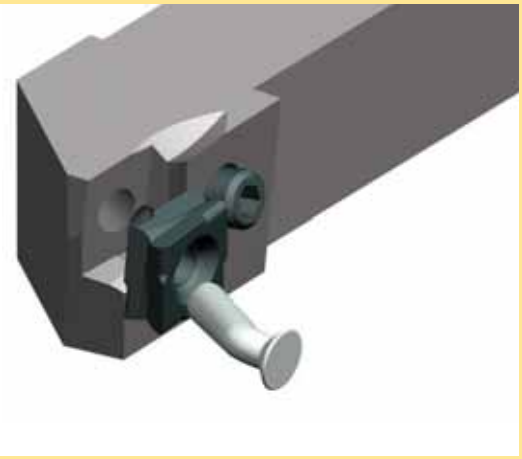
material group	grade	35 (117)	45 (150)	55 (183)	65 (217)	75 (250)	85 (283)	95 (317)	120 (400)	140 (467)	m/min	SFM
S	KCU25		◁▷								45	150
	KCU10				◁▷						60	200

Hardened Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	5 (17)	15 (50)	25 (83)	35 (117)	45 (150)	55 (183)	65 (217)	75 (250)	85 (283)	m/min	SFM
H	KCU10			◁▷							30	100

Fix-Perfect Tool System





With 2, 4, or 8 edges, this tool system is the ideal supplement to ISO tools.

The examples on the following page show the range of possible applications.

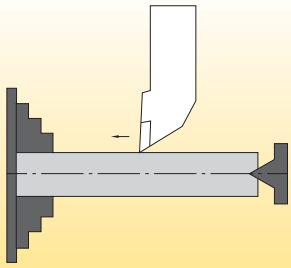


Use of the Fix-Perfect system results in:

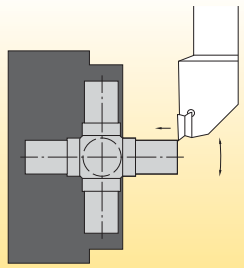
- Lower cutting forces.
- Smooth, open chips.
- Larger feed rates and depths of cut.

(continued)

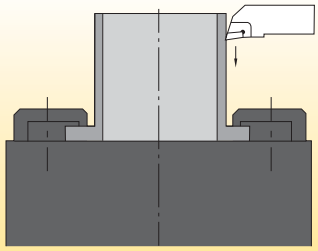
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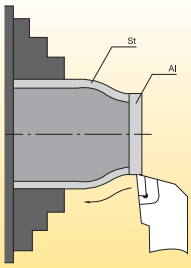
Turning slender shafts (clamping on one side also possible) with a workpiece length outside the chuck >8 x D with high geometric accuracy and surface finish.



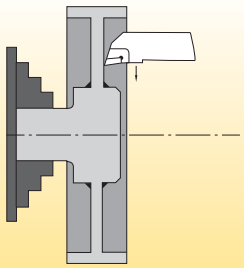
Machining of unstably chucked workpieces (e.g., in a swivel chuck).



External machining of thin-walled workpieces.

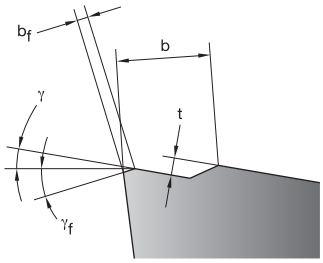


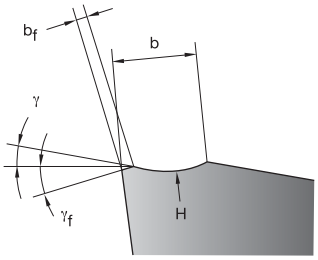
Turning material combinations of varying machinability, for example, aluminum combined with stainless and acid-proof steels.



Smoothing of welding seams with interrupted cuts.

Application Specific





old catalog number	new catalog number	b		t			b_f		
		mm	inch	mm	inch	γ°	mm	inch	γ_f°
NEW	**C2FIX110404LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110404RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21103L171	**C2FIX110405LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21103R171	**C2FIX110405RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110408LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX110408RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150504LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150504RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503L171	**C2FIX150505LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503R171	**C2FIX150505RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150508LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**C2FIX150508RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21503L172	**C2FIX150510LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21503R172	**C2FIX150510RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
NEW	**C2FIX150512LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
NEW	**C2FIX150512RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803L171	**C2FIX180610LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803R171	**C2FIX180610RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21803L172	**C2FIX180615LMN**	4,0	0.157	0,6	0.024	10	0,3	0.012	10
1.21803R172	**C2FIX180615RMN**	4,0	0.157	0,6	0.024	10	0,3	0.012	10
1.21501L152	**D2FIX150505LFN**	3,2	0.126	H	H	20	0,1	0.004	10
1.21501R152	**D2FIX150505RFN**	3,2	0.126	H	H	20	0,1	0.004	10
1.21101L173	**D2FIX110403LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101R173	**D2FIX110403RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX110404LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX110404RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101L171	**D2FIX110405LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21101R171	**D2FIX110405RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501R175	**D2FIX150503RMN**	2,2*	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150504LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150504RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501L171	**D2FIX150505LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21501R171	**D2FIX150505RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150508LMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
NEW	**D2FIX150508RMN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501L173	**D2FIX150510LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21501R173	**D2FIX150510RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21801L171	**D2FIX180610LMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21801R171	**D2FIX180610RMN**	3,2	0.126	0,5	0.020	10	0,2	0.008	10
1.21501L172	**D2FIX150505LRN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501R172	**D2FIX150505RRN**	2,6	0.102	0,4	0.016	10	0,1	0.004	10
1.21501L154	**D2FIX150503LMS**	3,0	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21501R154	**D2FIX150503RMS**	3,0	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21501L155	**D2FIX150505LMS**	3,0*	0.118	H	H	25**	Sharp	Sharp	Sharp

H – Hollow-ground.

(continued)

* – Deviation from old catalog number.

** – At mounting angle (clearance) 7°. Also 12° mounting angle possible (dependent on toolholder), then γ = 20°.

(continued)

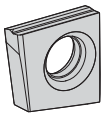
old catalog number	new catalog number	b		t			b_f		
		mm	inch	mm	inch	γ°	mm	inch	γ_f°
1.21501R155	**D2FIX150505RMS**	3,0*	0.118	H	H	25**	Sharp	Sharp	Sharp
1.21101L151	**D2FIX110403LHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
1.21101R151	**D2FIX110403RHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX110404LHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX110404RHP**	2,6	0.102	H	H	20	Sharp	Sharp	Sharp
1.21501L151	**D2FIX150503LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
1.21501R151	**D2FIX150503RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150504LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150504RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150508LHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
NEW	**D2FIX150508RHP**	3,0	0.118	H	H	20	Sharp	Sharp	Sharp
1.21500L145	**E2FIX100505LHP**	–	–	–	–	28	Sharp	Sharp	Sharp
1.21500R145	**E2FIX100505RHP**	–	–	–	–	28	Sharp	Sharp	Sharp
1.21500L171	**K2FIX150505LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.21500R171	**K2FIX150505RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002L173	**D4FIX140603LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002R173	**D4FIX140603RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140604LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140604RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002L171	**D4FIX140605LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.42002R171	**D4FIX140605RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140608LMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
NEW	**D4FIX140608RMN**	2,2	0.087	0,4	0.016	10	0,1	0.004	10
1.81202L171	**C8FIX120503LMP**	1,6	0.063	0,3	0.012	12	–	–	–
1.81202R171	**C8FIX120503RMP**	1,6	0.063	0,3	0.012	12	–	–	–
1.81502L171	**C8FIX150603LMP**	2,0	0.079	0,3	0.012	12	–	–	–
1.81502R171	**C8FIX150603RMP**	2,0	0.079	0,3	0.012	12	–	–	–
1.81802L171	**C8FIX180805LMP**	2,3	0.091	0,4	0.016	12	–	–	–
1.81802R171	**C8FIX180805RMP**	2,3	0.091	0,4	0.016	12	–	–	–
1.81201L121	**C8FIX120503LRP**	–	–	–	–	6	–	–	–
1.81201R121	**C8FIX120503RRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120504LRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120504RRP**	–	–	–	–	6	–	–	–
1.81201L122	**C8FIX120505LRP**	–	–	–	–	6	–	–	–
1.81201R122	**C8FIX120505RRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120508LRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120508RRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120512LRP**	–	–	–	–	6	–	–	–
NEW	**C8FIX120512RRP**	–	–	–	–	6	–	–	–
1.81501L121	**C8FIX150605LRN**	–	–	–	–	6	0,1	0.004	30
1.81501R121	**C8FIX150605RRN**	–	–	–	–	6	0,1	0.004	30
1.81501L122	**C8FIX150608LRN**	–	–	–	–	6	0,1	0.004	30
1.81501R122	**C8FIX150608RRN**	–	–	–	–	6	0,1	0.004	30
NEW	**C8FIX150612LRN**	–	–	–	–	6	0,1	0.004	30
NEW	**C8FIX150612RRN**	–	–	–	–	6	0,1	0.004	30
1.81801L121	**C8FIX180808LRN**	–	–	–	–	6	0,2	0.008	30
1.81801R121	**C8FIX180808RRN**	–	–	–	–	6	0,2	0.008	30
1.81801L122	**C8FIX180812LRN**	–	–	–	–	6	0,2	0.008	30
1.81801R122	**C8FIX180812RRN**	–	–	–	–	6	0,2	0.008	30

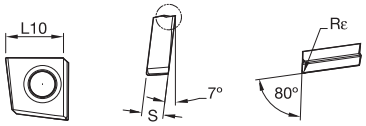
H – Hollow-ground.

* – Deviation from old catalog number.

** – At mounting angle (clearance) 7°. Also 12° mounting angle possible (dependent on toolholder), then γ = 20°.

beyond



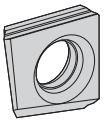


● first choice
○ alternate choice

P		●	●	●	●	●					
M		○	○	●	●	●					
K		●	●	●	●	●					
N					●	●					
S				○	●	●					
H											

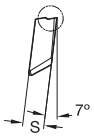
C2FIX-MN

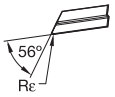
	L10		S		Rε						
catalog number	mm	in	mm	in	mm	in	KCP10	KCP25	KCP40	KCU10	KCU25
C2FIX110404LMN	10,70	.423	4,00	.157	0,40	.016	●	●	●	●	●
C2FIX110404RMN	10,70	.423	4,00	.157	0,40	.016	●	●	●	●	●
C2FIX110405LMN	10,70	.423	4,00	.157	0,50	.020		●	●	●	
C2FIX110405RMN	10,70	.432	4,00	.157	0,50	.020		●	●		
C2FIX110408LMN	10,70	.419	4,00	.157	0,80	.032	●	●	●	●	●
C2FIX110408RMN	10,70	.419	4,00	.157	0,80	.032	●	●	●	●	●
C2FIX150504LMN	14,70	.578	5,00	.197	0,40	.016	●	●	●	●	●
C2FIX150504RMN	14,70	.578	5,00	.197	0,40	.016	●	●	●	●	●
C2FIX150505LMN	14,70	.578	5,00	.197	0,50	.020		●	●	●	
C2FIX150505RMN	14,70	.578	5,00	.197	0,50	.020		●	●		
C2FIX150508LMN	14,60	.574	5,00	.197	0,80	.032	●	●	●	●	●
C2FIX150508RMN	14,60	.574	5,00	.197	0,80	.032	●	●	●	●	●
C2FIX150510LMN	14,50	.571	5,00	.197	1,00	.039		●	●		
C2FIX150510RMN	14,50	.572	5,00	.197	1,00	.039		●	●		
C2FIX150512LMN	14,50	.571	5,00	.197	1,20	.048	●	●	●	●	●
C2FIX150512RMN	14,50	.571	5,00	.197	1,20	.048	●	●	●	●	●
C2FIX180610LMN	17,50	.689	6,00	.236	1,00	.039		●	●	●	
C2FIX180610RMN	17,50	.689	6,00	.236	1,00	.039		●	●	●	
C2FIX180615LMN	17,50	.689	6,00	.236	1,50	.059		●	●		
C2FIX180615RMN	17,50	.689	6,00	.236	1,50	.059		●	●		



D2FIX-MN







● first choice
○ alternate choice

P		●	●	●	●	●					
M		○	○	●	●	●					
K		●	●	●	●	●					
N					●	●					
S				○	●	●					
H											

catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX110403LMN	10,70	.420	4,00	.157	0,30	.012	●	●			
D2FIX110403RMN	10,70	.420	4,00	.157	0,30	.012	●	●			
D2FIX110404LMN	10,60	.417	4,00	.157	0,40	.016	●	●	●	●	●
D2FIX110404RMN	10,60	.417	4,00	.157	0,40	.016	●	●	●	●	●
D2FIX110405LMN	10,50	.413	4,00	.157	0,50	.020	●	●	●		
D2FIX110405RMN	10,50	.413	4,00	.157	0,50	.020	●	●	●		
D2FIX150503RMN	14,70	.579	5,00	.197	0,30	.012	●	●			
D2FIX150504LMN	14,60	.575	5,00	.197	0,40	.016	●	●	●	●	●
D2FIX150504RMN	14,60	.575	5,00	.197	0,40	.016	●	●	●	●	●
D2FIX150505LMN	14,50	.571	5,00	.197	0,50	.020	●	●	●		
D2FIX150505RMN	14,50	.571	5,00	.197	0,50	.020	●	●	●		
D2FIX150508LMN	14,20	.560	5,00	.197	0,80	.032	●	●	●	●	●
D2FIX150508RMN	14,20	.560	5,00	.197	0,80	.032	●	●	●	●	●
D2FIX150510LMN	14,00	.551	5,00	.197	1,00	.039		●			
D2FIX150510RMN	14,00	.551	5,00	.197	1,00	.039	●	●	●		
D2FIX180610LMN	17,00	.669	6,00	.236	1,00	.039		●			
D2FIX180610RMN	17,00	.669	6,00	.236	1,00	.039		●			

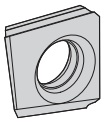
Application Specific

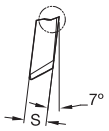
beyond

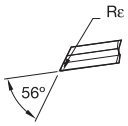
● first choice
○ alternate choice

	KCP10	KCP25	KCP40	KCU10	KCU25
P	●	●	●	●	●
M	○	○	●	●	●
K	●	●	●	●	●
N				●	●
S			○	●	●
H					

D2FIX-HP



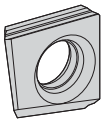
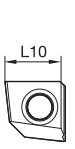



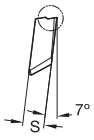


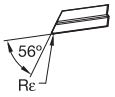
catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
D2FIX110403LHP	10,10	.396	4,00	.157	0,30	.012
D2FIX110403RHP	10,10	.396	4,00	.157	0,30	.012
D2FIX110404LHP	10,00	.394	4,00	.157	0,40	.016
D2FIX110404RHP	10,00	.394	4,00	.157	0,40	.016
D2FIX150503LHP	14,10	.554	5,00	.197	0,30	.012
D2FIX150503RHP	14,10	.554	5,00	.197	0,30	.012
D2FIX150504LHP	14,00	.551	5,00	.197	0,40	.016
D2FIX150504RHP	14,00	.551	5,00	.197	0,40	.016
D2FIX150508LHP	13,60	.535	5,00	.197	0,80	.032
D2FIX150508RHP	13,60	.535	5,00	.197	0,80	.032

KCP10	KCP25	KCP40	KCU10	KCU25
	●		●	
	●		●	
			●	●
			●	●
	●		●	
	●		●	
			●	●
			●	●
			●	●
			●	●

D2FIX-MS

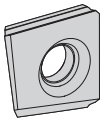
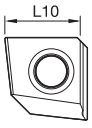


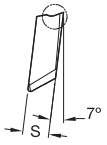


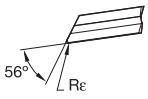
catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
D2FIX150505RMS	13,90	.549	5,00	.197	0,50	.020
D2FIX150505LMS	13,90	.549	5,00	.197	0,50	.020
D2FIX150503RMS	14,10	.554	5,00	.197	0,30	.012
D2FIX150503LMS	14,10	.554	5,00	.197	0,30	.012

KCP10	KCP25	KCP40	KCU10	KCU25
			●	
			●	
			●	
			●	

D2FIX-FN





catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
D2FIX150505RFN	13,90	.549	5,00	.197	0,50	.020
D2FIX150505LFN	13,90	.549	5,00	.197	0,50	.020

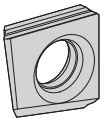
KCP10	KCP25	KCP40	KCU10	KCU25
	●		●	
	●		●	

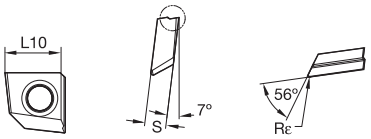
beyond

● first choice
○ alternate choice

P		●	●	●	●	●					
M		○	○	●	●	●					
K		●	●	●	●	●					
N					●	●					
S				○	●	●					
H											

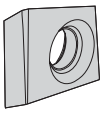
D2FIX-RN

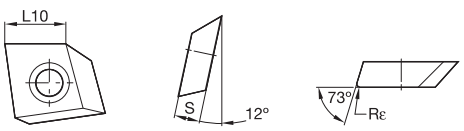




catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	KCP10	KCP25	KCP40	KCU10	KCU25
D2FIX150505LRN	14,50	.571	5,00	.197	0,50	.020	●	●	●		
D2FIX150505RRN	14,50	.571	5,00	.197	0,50	.020	●		●		

E2FIX-HP



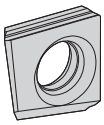


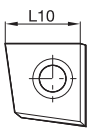
catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	KCP10	KCP25	KCP40	KCU10	KCU25
E2FIX100505RHP	10,50	.413	5,00	.197	0,50	.020				●	
E2FIX100505LHP	10,50	.413	5,00	.197	0,50	.020				●	

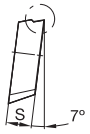
beyond

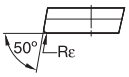
	KCP10	KCP25	KCP40	KCU10	KCU25
P	●	●	●	●	●
M	○	○	●	●	●
K	●	●	●	●	●
N				●	●
S			○	●	●
H					

● first choice
○ alternate choice







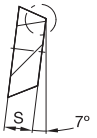


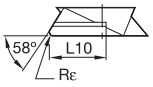
K2FIX-MN

catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
K2FIX150505RMN	14,50	.571	5,00	.197	0,50	.020
K2FIX150505LMN	14,50	.571	5,00	.197	0,50	.020









D4FIX-MN

catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	KCP10	KCP25	KCP40	KCU10	KCU25
D4FIX140603LMN	7,20	.283	5,90	.232	0,30	.012		●			
D4FIX140603RMN	7,20	.283	5,90	.232	0,30	.012	●	●			
D4FIX140604LMN	7,10	.280	5,90	.233	0,40	.016	●	●	●	●	●
D4FIX140604RMN	7,10	.280	5,90	.233	0,40	.016	●	●	●	●	●
D4FIX140605LMN	7,00	.276	5,90	.233	0,50	.020		●			
D4FIX140605RMN	7,00	.276	5,90	.233	0,50	.020	●	●			
D4FIX140608LMN	6,70	.264	5,90	.233	0,80	.031	●	●	●	●	●
D4FIX140608RMN	6,70	.264	5,90	.233	0,80	.031	●	●	●	●	●

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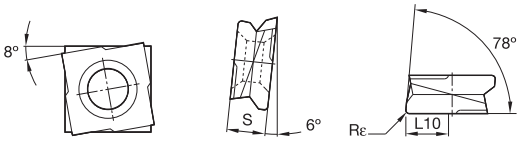
beyond

		KCP10	KCP25	KCP40	KCU10	KCU25
P		●	●	●	●	●
M		○	○	●	●	●
K		●	●	●	●	●
N					●	●
S				○	●	●
H						

● first choice
○ alternate choice

C8FIX-RN

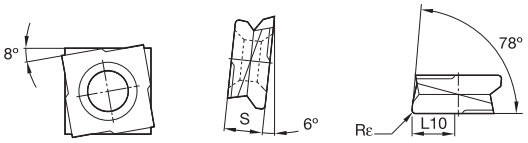




catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
C8FIX150605LRN	9,10	.358	6,60	.260	0,50	.020
C8FIX150605RRN	9,10	.358	6,60	.260	0,50	.020
C8FIX150608LRN	8,90	.350	6,60	.260	0,80	.031
C8FIX150608RRN	8,90	.350	6,60	.260	0,80	.031
C8FIX150612LRN	8,60	.339	6,60	.260	1,20	.047
C8FIX150612RRN	8,60	.339	6,60	.260	1,20	.047
C8FIX180808LRN	10,90	.429	7,90	.311	0,80	.031
C8FIX180808RRN	10,90	.429	7,90	.311	0,80	.031
C8FIX180812LRN	10,60	.417	7,90	.311	1,20	.047
C8FIX180812RRN	10,60	.417	7,90	.311	1,20	.047

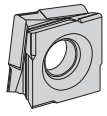
C8FIX-RP

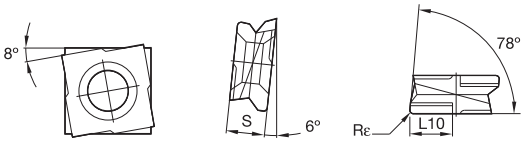




catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
C8FIX120503LRP	7,30	.287	5,50	.217	0,30	.012
C8FIX120503RRP	7,30	.287	5,50	.217	0,30	.012
C8FIX120504LRP	7,20	.283	5,50	.217	0,40	.016
C8FIX120504RRP	7,20	.283	5,50	.217	0,40	.016
C8FIX120505LRP	7,10	.280	5,50	.217	0,50	.020
C8FIX120505RRP	7,10	.280	5,50	.217	0,50	.020
C8FIX120508LRP	6,90	.272	5,50	.217	0,80	.031
C8FIX120508RRP	6,90	.272	5,50	.217	0,80	.031

C8FIX-MP





catalog number	L10 mm	L10 in	S mm	S in	Rε mm	Rε in
C8FIX120503LMP	7,30	.287	5,50	.217	0,30	.012
C8FIX120503RMP	7,30	.287	5,50	.217	0,30	.012
C8FIX150603LMP	9,30	.366	6,60	.260	0,30	.012
C8FIX150603RMP	9,30	.366	6,60	.260	0,30	.012
C8FIX180805LMP	11,10	.437	7,90	.311	0,50	.020
C8FIX180805RMP	11,10	.437	7,90	.311	0,80	.031

KENNAMETAL

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

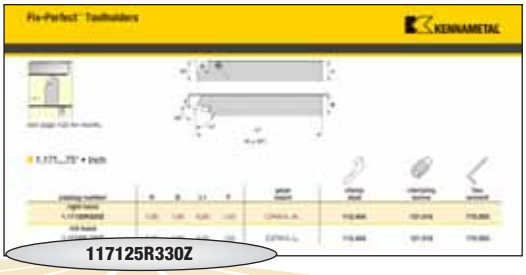
By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.



Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**



Application Specific

Metric/Inch

1	1	71	25	R	3	3	0	Z
Turning Program	Number of Cutters	Version	Shaft Dimensions	Direction of Working	Insert Size and Type	Insert Shape	Clamping Screw Support	Inch Toolholder

1 = Fix-Perfect

1 = Inserts with 2 cutting edges

3 = Inserts with 4 cutting edges

7 = Inserts with 8 cutting edges

08 = 90° or 93° setting, for machining aluminum
16 = 92° setting angle
20 = 92° setting angle
22 = 92° setting angle
30 = 75° setting angle
71 = 75° setting angle
72 = 45° setting angle
77 = 90° setting angle
80 = 90° or 93° setting angle

R = Right
L = Left

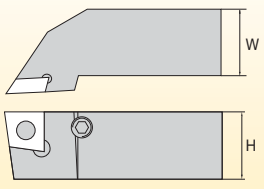
0 = Activated from main cutting edge

1 = Minor cutting edge

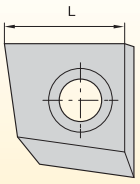
2 = Above

5 = Main cutting edge with sharp-edged full cartridge

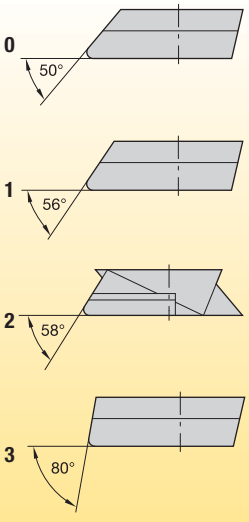
6 = Minor cutting edge with sharp-edged full cartridge



Toolholder
10 = 10 x 10mm
11 = 40 x 40mm
16 = 16 x 16mm
20 = 20 x 20mm
21 = 50 x 50mm
25 = 25 x 25mm
32 = 32 x 25mm
32 x 32mm
40 = 40 x 32mm

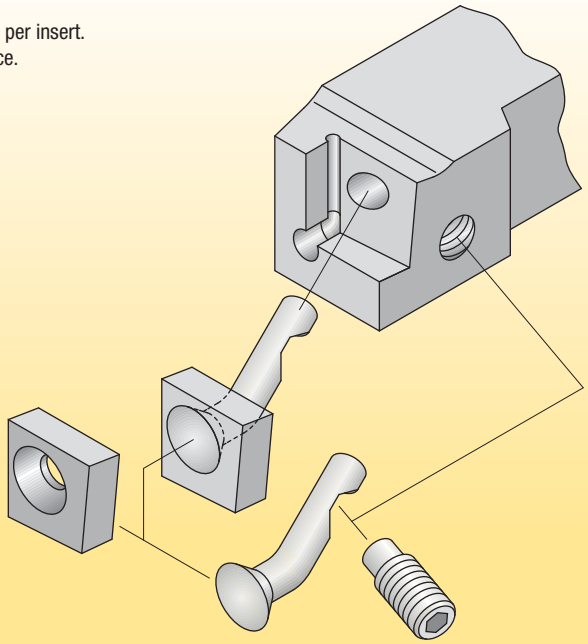


	L	cutting edges
0	8mm 20mm 25mm	4 4 4
1	10,5mm 12mm	2 8
3	14,5mm 15mm	2 8
4	17,5mm 18mm	2 8
5	23,5mm 21mm	2 8
7	10,5mm	2 Alu

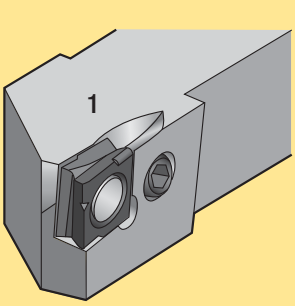


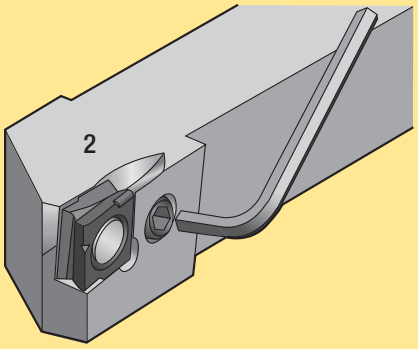
Features of the Fix-Perfect lathe tool system:

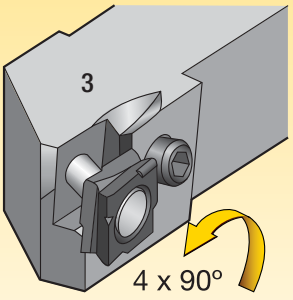
- Cost-effective use of inserts with up to eight positive cutting edges per insert.
- Indexable insert ground on all sides, thus requiring less cutting force.
- High stability due to upright insert for roughing and profiling tasks.
- Guaranteed rigid clamping of inserts.
- Optimum chip evacuation guaranteed.
- Cutting edges protected by insert seat.

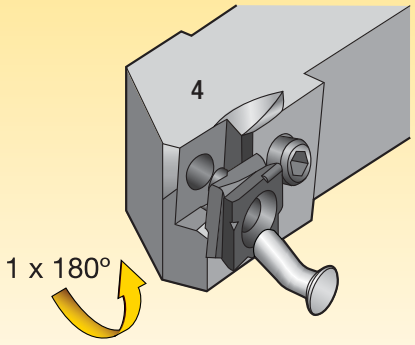


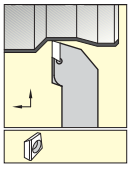
Quick and easy cutting edge switch —
just loosen the pin, no need to remove it.



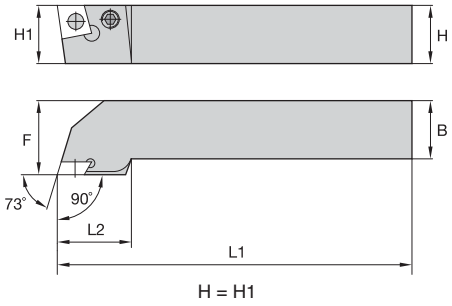






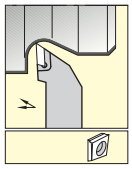


See page F28 for inserts.

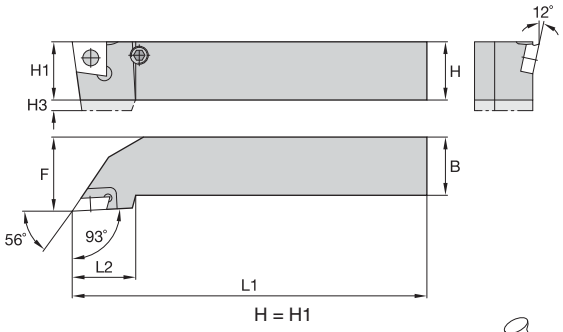


1.108...90° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.10825R700	25	25	150,0	36	32,0	E2FIX10..R..	**410.081**	**121.616**	**170.003**
left hand									
1.10825L700	25	25	150,0	36	32,0	E2FIX10..L..	**410.081**	**121.616**	**170.003**

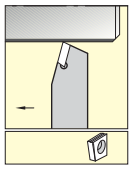


See page F27 for inserts.

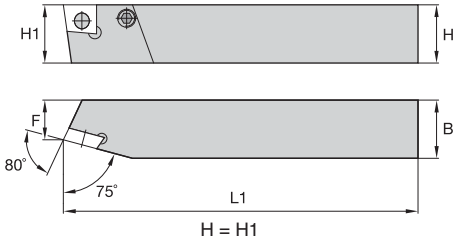


1.108...93° • Metric

catalog number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand										
1.10820R310	20	5	20	125,0	26	25,0	D2FIX15..RHP/FN/MS	**112.403**	**121.612**	**170.003**
1.10825R310	25	—	25	150,0	26	32,0	D2FIX15..RHP/FN/MS	**112.404**	**121.616**	**170.003**
left hand										
1.10820L310	20	5	20	125,0	26	25,0	D2FIX15..LHP/FN/MS	**112.403**	**121.612**	**170.003**
1.10825L310	25	—	25	150,0	26	32,0	D2FIX15..LHP/FN/MS	**112.404**	**121.616**	**170.003**



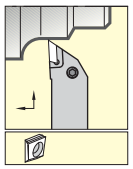
See page F25 for inserts.



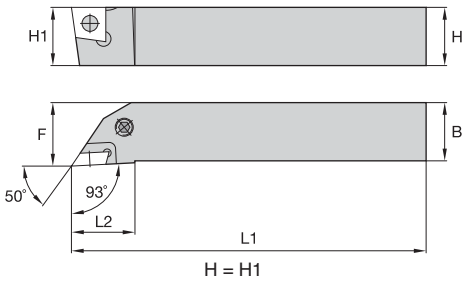
H = H1

1.171...75° • Metric

catalog number	H	B	L1	F	gage insert	clamp stud	clamping screw	hex wrench
right hand								
1.17120R130	20	20	125,0	15,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.17125R330	25	25	150,0	17,0	C2FIX15..R..	**112.404**	**121.616**	**170.003**
left hand								
1.17120L130	20	20	125,0	15,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.17125L330	25	25	150,0	17,0	C2FIX15..L..	**112.404**	**121.616**	**170.003**



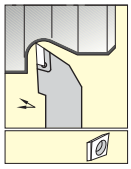
See page F29 for inserts.



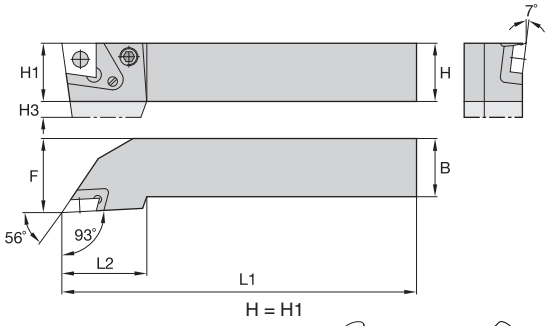
H = H1

1.180...93° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.18025R302	25	20	150,0	36	26,0	K2FIX15..R..	**112.423**	**121.612**	**170.003**
left hand									
1.18025L302	25	20	150,0	36	26,0	K2FIX15..L..	**112.423**	**121.612**	**170.003**

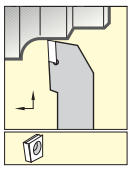


See page F27 for inserts.

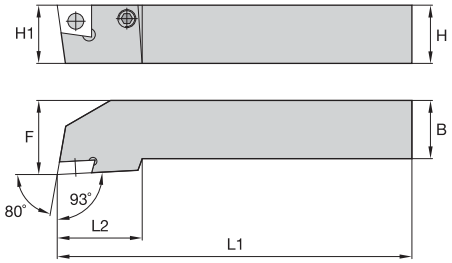


1.18 • Metric

catalog number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench	steel nest assembly
right hand											
1.18016R110	16	4	16	100,0	28	24,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18020R110	20	–	20	125,0	26	25,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18020R310	20	5	20	125,0	26	26,0	D2FIX15..R..	**112.403**	**121.612**	**170.003**	–
1.18025R110	25	–	25	150,0	26	32,0	D2FIX11..R..	**112.244**	**121.612**	**170.003**	–
1.18025R310	25	–	25	150,0	26	32,0	D2FIX15..R..	**112.404**	**121.616**	**170.003**	–
1.18025R315	25	7	25	150,0	36	32,0	D2FIX15..R..	**112.505**	**121.616**	**170.003**	**132.151**
1.18032R315	32	–	25	170,0	36	32,0	D2FIX15..R..	**112.505**	**121.616**	**170.003**	**132.151**
1.18032R410	32	–	25	170,0	36	32,0	D2FIX18..R..	**112.604**	**121.816**	**170.004**	–
left hand											
1.18016L110	16	4	16	100,0	28	24,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18020L110	20	–	20	125,0	26	25,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18020L310	20	5	20	125,0	26	26,0	D2FIX15..L..	**112.403**	**121.612**	**170.003**	–
1.18025L110	25	–	25	150,0	26	32,0	D2FIX11..L..	**112.244**	**121.612**	**170.003**	–
1.18025L310	25	–	25	150,0	26	32,0	D2FIX15..L..	**112.404**	**121.616**	**170.003**	–
1.18025L315	25	7	25	150,0	36	32,0	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**
1.18032L315	32	–	25	170,0	36	32,0	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**
1.18032L410	32	–	25	170,0	36	32,0	D2FIX18..L..	**112.604**	**121.816**	**170.004**	–

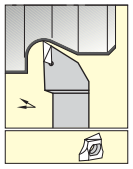


See page F25 for inserts.

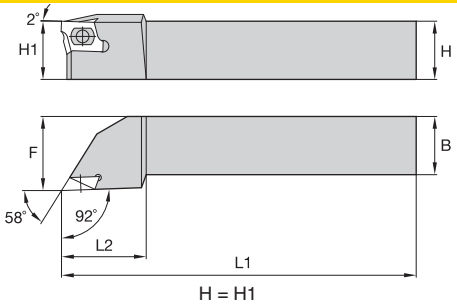


1.180...93° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.18020R130	20	20	125,0	26	26,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.18025R130	25	25	150,0	26	32,0	C2FIX11..R..	**112.244**	**121.612**	**170.003**
1.18025R330	25	25	150,0	36	32,0	C2FIX15..R..	**112.404**	**121.616**	**170.003**
1.18032R430	32	25	170,0	36	32,0	C2FIX18..R..	**112.604**	**121.816**	**170.004**
left hand									
1.18020L130	20	20	125,0	26	26,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.18025L130	25	25	150,0	26	32,0	C2FIX11..L..	**112.244**	**121.612**	**170.003**
1.18025L330	25	25	150,0	36	32,0	C2FIX15..L..	**112.404**	**121.616**	**170.003**
1.18032L430	32	25	170,0	36	32,0	C2FIX18..L..	**112.604**	**121.816**	**170.004**

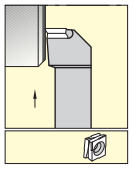


See page F29 for inserts.

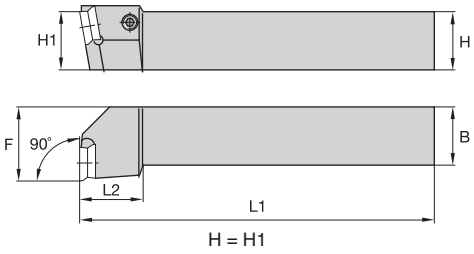


1.380...92° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.38020R021	20	20	125,0	35	25,0	D4FIX..R..	**114.111**	**121.812**	**170.004**
1.38025R021	25	25	150,0	36	32,0	D4FIX..R..	**114.111**	**121.816**	**170.004**
left hand									
1.38020L021	20	20	125,0	35	25,0	D4FIX..L..	**114.111**	**121.812**	**170.004**
1.38025L021	25	25	150,0	36	32,0	D4FIX..L..	**114.111**	**121.816**	**170.004**



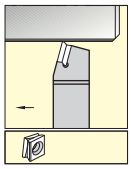
See page F30 for inserts.



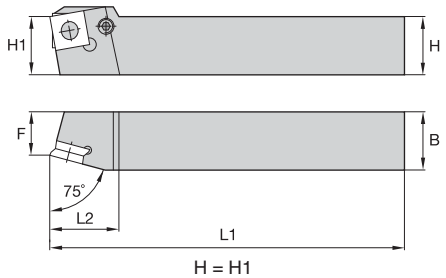
1.777...90° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77720R101	20	20	125,0	26	25,5	1.81201L9	**118.214**	**121.612**	**170.003**
1.77725R301	25	25	150,0	26	32,0	C8FIX15..L..	**118.314**	**121.816**	**170.004**
left hand									
1.77720L101	20	20	125,0	26	25,5	1.81201R9	**118.214**	**121.612**	**170.003**

NOTE: Right-hand tool requires left-hand insert.



See page F30 for inserts.



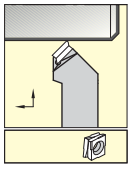
1.771...75° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77120R100	20	20	125,0	20	17,0	C8FIX12..R..	**118.204**	**121.612**	**170.003**
1.77125R300	25	25	150,0	26	21,0	C8FIX15..R..	**410.084**	**121.816**	**170.004**
1.77132R400	32	32	170,0	38	27,0	C8FIX18..R..	**118.404**	**121.820**	**170.004**

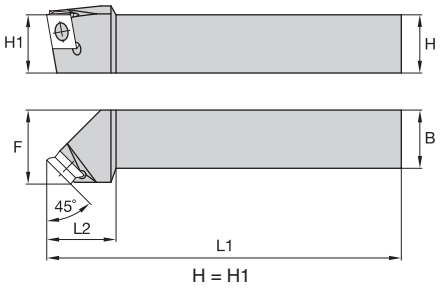
(continued)

(1.771...75° • Metric continued)

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
left hand									
1.77120L100	20	20	125,0	20	17,0	C8FIX12..L..	**118.204**	**121.612**	**170.003**
1.77132L400	32	32	170,0	38	27,5	C8FIX18..L..	**118.404**	**121.820**	**170.004**



See page F30 for inserts.

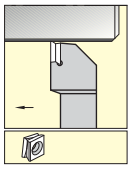


H = H1

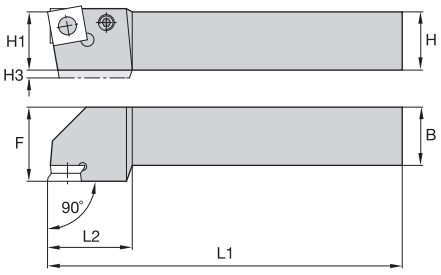
1.772...45° • Metric

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77225R301	25	25	150,0	26	32,0	C8FIX15..L..	**118.314**	**121.816**	**170.004**

NOTE: C8FIX15..L.. is usable just for plunging.
For both plunging and turning C4FIX15..L.. has to be used.



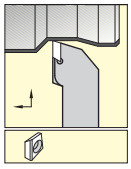
See page F30 for inserts.



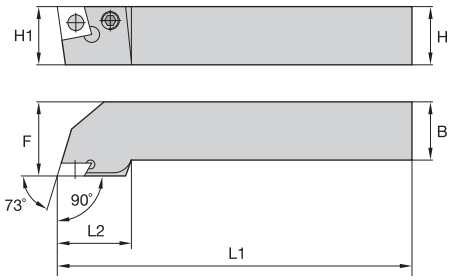
H = H1

1.780...90° • Metric

catalog number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	screw	hex wrench
right hand											
1.78012R103	12	–	12	80,0	20	14,0	C8FIX12..R..	–	–	**122.511**	**170.003**
1.78016R100	16	4	16	100,0	28	25,0	C8FIX12..R..	**118.204**	**121.616**	–	**170.003**
1.78020R100	20	–	20	125,0	26	25,0	C8FIX12..R..	**118.204**	**121.616**	–	**170.003**
1.78025R100	25	–	25	150,0	26	32,0	1.81201R...	**118.214**	**121.616**	–	**170.003**
1.78025R300	25	–	25	150,0	36	32,0	C8FIX15..R..	**410.084**	**121.816**	–	**170.004**
1.78032R400	32	–	32	170,0	36	40,0	C8FIX18..R..	**118.404**	**121.825**	–	**170.004**
left hand											
1.78025L100	25	–	25	150,0	26	32,0	1.81201L...	**118.214**	**121.616**	–	**170.003**
1.78025L300	25	–	25	150,0	36	32,0	C8FIX15..L..	**410.084**	**121.816**	–	**170.004**
1.78032L400	32	–	32	170,0	36	40,0	C8FIX18..L..	**118.404**	**121.825**	–	**170.004**

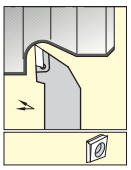


See page F28 for inserts.

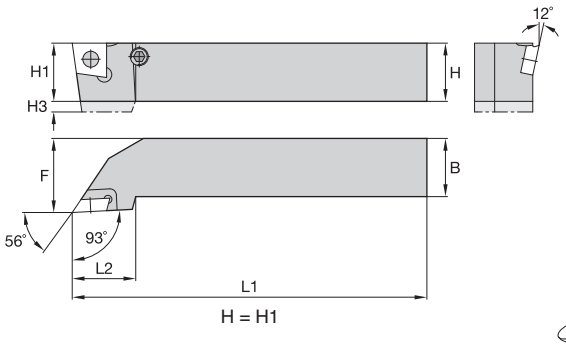


1.108...90° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand **1.10825R700Z**	1.00	1.00	6.00	1.42	1.250	E2FIX10..R..	**410.081**	**121.616**	**170.003**
left hand **1.10825L700Z**	1.00	1.00	6.00	1.42	1.250	E2FIX10..L..	**410.081**	**121.616**	**170.003**

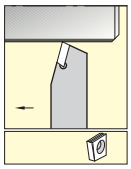


See page F27 for inserts.

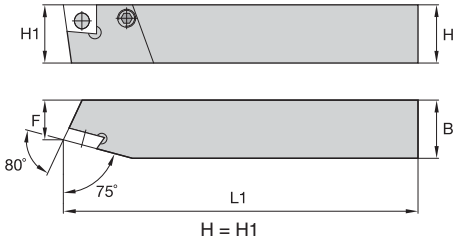


1.108...93° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand **1.10825R310Z**	1.00	1.00	6.00	1.18	1.250	D2FIX15..RHP/FN/MS	**112.404**	**121.616**	**170.003**
left hand **1.10825L310Z**	1.00	1.00	6.00	1.18	1.250	D2FIX15..LHP/FN/MS	**112.404**	**121.616**	**170.003**

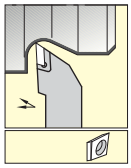


See page F25 for inserts.

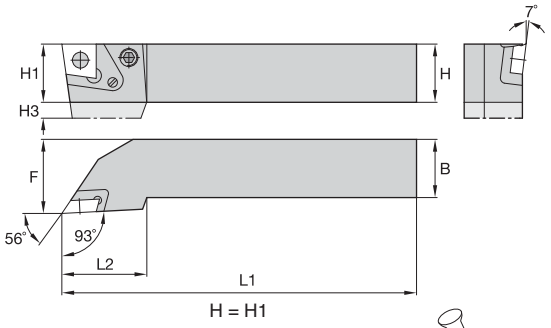


1.171...75° • Inch

catalog number	H	B	L1	F	gage insert	clamp stud	clamping screw	hex wrench
right hand								
1.17125R330Z	1.00	1.00	6.00	.750	C2FIX15..R..	**112.404**	**121.616**	**170.003**
left hand								
1.17125L330Z	1.00	1.00	6.00	.750	C2FIX15..L..	**112.404**	**121.616**	**170.003**

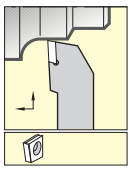


See page F26 for inserts.

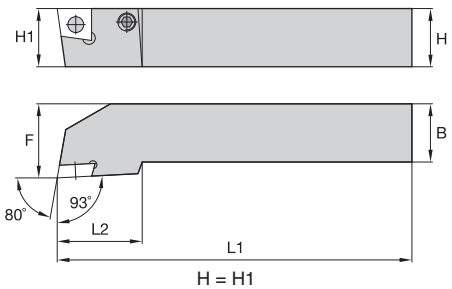


1.18 • Inch

catalog number	H	H3	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench	steel nest assembly
right hand											
1.18025R310Z	1.00	–	1.00	6.00	1.18	1.250	D2FIX15..L..	**112.404**	**121.616**	**170.003**	–
1.18025R315Z	1.00	.28	1.00	6.00	1.46	1.250	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**
left hand											
1.18025L310Z	1.00	–	1.00	6.00	1.18	1.250	D2FIX15..L..	**112.404**	**121.616**	**170.003**	–
1.18025L315Z	1.00	.28	1.00	6.00	1.46	1.250	D2FIX15..L..	**112.505**	**121.616**	**170.003**	**132.156**

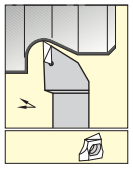


See page F25 for inserts.

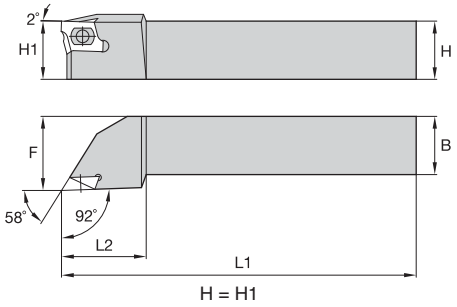


1.180...93° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.18025R330Z	1.00	1.00	6.00	1.42	1.250	C2FIX15..L..	**112.404**	**121.616**	**170.003**
left hand									
1.18025L330Z	1.00	1.00	6.00	1.42	1.250	C2FIX15..L..	**112.404**	**121.616**	**170.003**

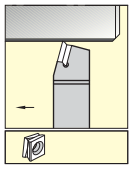


See page F29 for inserts.

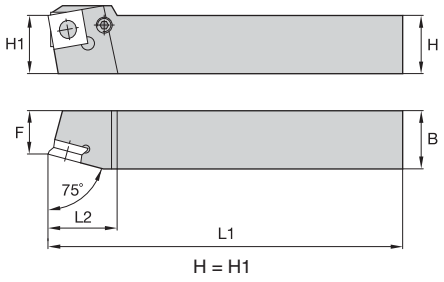


1.380...92° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.38025R021Z	1.00	1.00	6.00	1.42	1.250	D4FIX..R..	**114.114**	**121.816**	**170.004**
left hand									
1.38025L021Z	1.00	1.00	6.00	1.42	1.250	D4FIX..L..	**114.114**	**121.816**	**170.004**

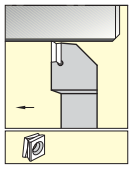


See page F30 for inserts.

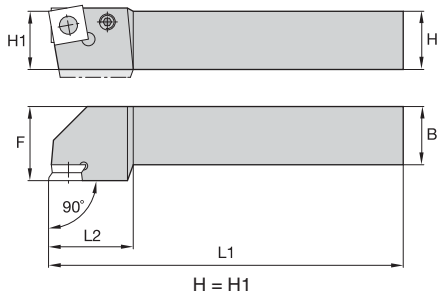


1.771...75° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.77125R300Z	1.00	1.00	6.00	1.18	.875	C8FIX15..R..	**410.084**	**121.816**	**170.004**
1.77132R400Z	1.25	1.25	7.00	1.50	1.073	C8FIX18..R..	**118.404**	**121.820**	**170.004**
left hand									
1.77125L300Z	1.00	1.00	6.00	1.18	.875	C8FIX15..L..	**410.084**	**121.816**	**170.004**
1.77132L400Z	1.25	1.25	7.00	1.50	1.073	C8FIX18..L..	**118.404**	**121.820**	**170.004**



See page F30 for inserts.



1.78...90° • Inch

catalog number	H	B	L1	L2	F	gage insert	clamp stud	clamping screw	hex wrench
right hand									
1.78025R300Z	1.00	1.00	6.00	1.42	1.250	C8FIX15..R..	**410.084**	**121.816**	**170.004**
1.78032R400Z	1.25	1.25	7.00	1.42	1.500	C8FIX18..R..	**118.404**	**121.825**	**170.004**
left hand									
1.78025L300Z	1.00	1.00	6.00	1.42	1.250	C8FIX15..L..	**410.084**	**121.816**	**170.004**
1.78032L400Z	1.25	1.25	7.00	1.42	1.500	C8FIX18..L..	**118.404**	**121.825**	**170.004**



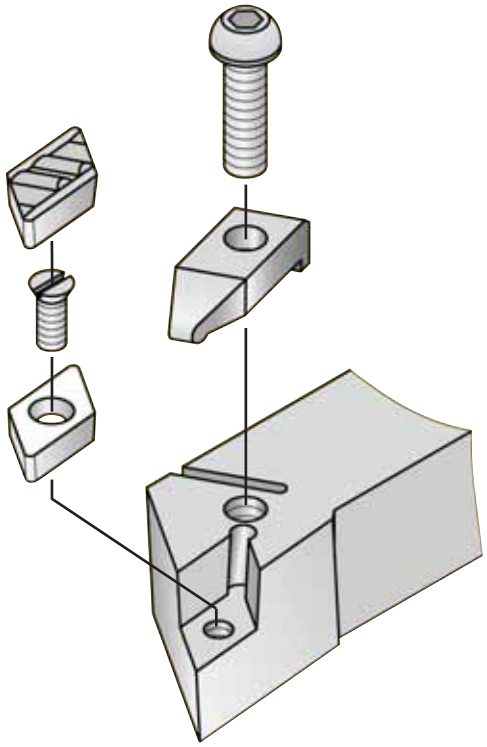
Top Notch™ Profiling

Primary Application

Top Notch is the proven solution for high productivity. The Top Notch system provides consistent tool performace, accurate indexing, and superior clamping to provide excellent surface finishing and superior tool life.

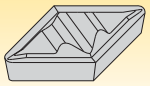
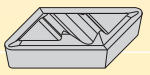
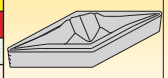
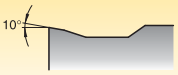
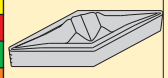
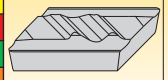
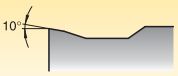
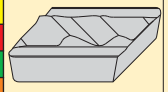
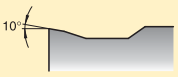
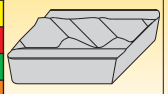
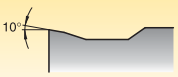
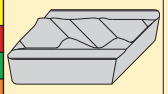
Features and Benefits

- Top Notch guarantees that the insert is rigidly held.
- Stable against alternating cutting force directions, compared with customary clamping methods.
- Second cutting edge well protected against chiphammering.
- Precision-ground inserts guarantee high precision indexing and lower cutting forces.



Select the geometry — based on feed rate and depth of cut

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

operation	insert style application	insert geometry	profile	feed rate — in (mm) / depth of cut — in (mm)
finishing	DCGR			.0015 (0,04) .0025 (0,063) .004 (0,01) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .200 (5,0) .004 (0,1) .006 (0,16) .010 (0,25) .016 (0,4) .025 (0,63) .040 (1,0) .060 (1,6) .100 (2,5) .160 (4,0) .250 (6,3) .500 (10,0) .004–.012 (0,1–0,3) .010–.070 (0,3–1,8)
	KCGR			.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)
	VCGR			.004–.014 (0,1–0,4) .010–.080 (0,3–2,0)
finishing	KNGX-15			.006–.016 (0,2–0,4) .030–.110 (0,8–2,8)
medium machining	KNGX-20			.008–.018 (0,2–0,5) .040–.120 (1,0–3,0)
medium machining	KNGX-25			.010–.022 (0,3–0,6) .045–.140 (1,1–3,6)
roughing	KNGX-32			.012–.026 (0,3–0,7) .060–.200 (1,5–5,1)

Step 1 • Select the insert geometry

Negative Inserts



-K...X-32
Roughing



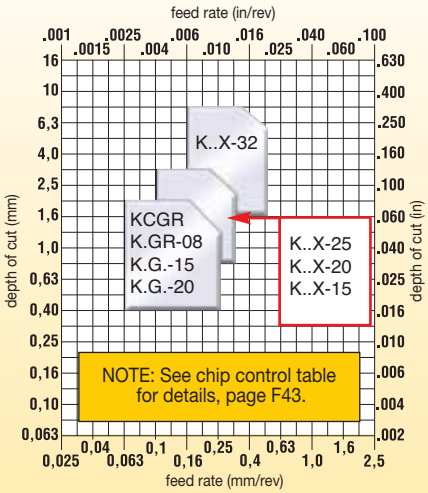
-K...X-25—K...X-15,
Medium Machining



-KCGR
Finishing



-K. GR-08, K.G.-15,
K.G.-20
Finishing



Positive Inserts



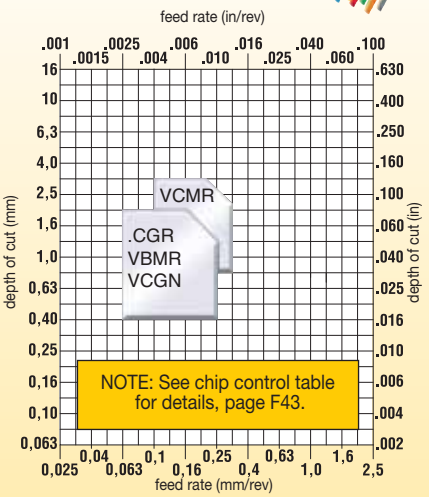
-VCMR
Medium Machining



-.CGR, VBMR
Finishing



-VCGN
Finishing



Step 2 • Select the grade

cutting condition		Steel Finishing	Steel Medium Machining	Steel Roughing	Stainless Steel Finishing	Stainless Steel Medium Machining	Stainless Steel Roughing
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 Finishing	Cast Iron Medium Machining	Cast Iron Roughing	Non-Ferrous Finishing	Non-Ferrous Medium Machining	Non-Ferrous Roughing
heavily interrupted cut		KC8050	KC8050	KC8050	KC5010	KC5010	KC5010
lightly interrupted cut		KC9315	KC8050	KC8050	KC5410 KD1425	KC5010	KC5010
varying depth of cut, casting, or forging skin		KC9315	KC9315	KC9315	KD1425	KC5410	KC5410
smooth cut, pre-turned surface		KC5010	KC5010	KC5010	KD1425	KC5410	KC5410

cutting condition		High-Temperature Alloys Finishing	High-Temperature Alloys Medium Machining	High-Temperature Alloys Roughing
heavily interrupted cut		KC5025	K68	K68
lightly interrupted cut		KC5010	KC5010	KC8050
varying depth of cut, casting, or forging skin		KC5010	KC5010	KC5010
smooth cut, pre-turned surface		KC5010	KC9110	KC5010

Application Specific

Step 3 • Select the cutting speed

Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	50 (170)	100 (330)	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	m/min	SFM
P	KT315				◁▷					260	850
	KC9110					◁▷				340	800
	KC9125			◁▷						180	600
	KC8050			◁▷						165	550

Stainless Steel — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	50 (170)	100 (330)	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	m/min	SFM
M	KT315				◁▷					230	750
	KC5010/KCU10			◁▷						180	600
	KC5025/KCU25		◁▷							120	400
	KC9225			◁▷						170	550
	KC8050			◁▷						150	500

Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	150 (490)	200 (655)	250 (820)	300 (980)	350 (1150)	400 (1300)	500 (1600)	750 (2400)	m/min	SFM
K	KB1345								◁▷	760	2520
	KT315				◁▷					275	900
	KC5010/KCU10			◁▷						245	800
	KC9315				◁▷					245	800
	KC8050			◁▷						230	750

Non-Ferrous — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	250 (800)	500 (1600)	750 (2400)	1000 (3200)	1250 (4000)	1500 (4800)	1750 (5600)	2000 (6400)	m/min	SFM
N	KO1425			◁▷						765	2500
	KC5410		◁▷							550	1800
	KC5010/KCU10		◁▷							460	1500
	K68	◁▷								150	500

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◁▷

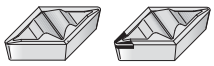
material group	grade	15 (50)	40 (120)	55 (180)	80 (250)	100 (330)	170 (550)	200 (655)	230 (750)	m/min	SFM
S	KC5010/KCU10			◁▷						60	200
	KC5025/KCU25			◁▷						50	170
	KC8050			◁▷						70	230
	K68		◁▷							30	100

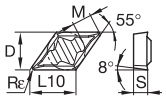
◁▷ Represents the recommended starting conditions. Optimize for your specific application.

● first choice
○ alternate choice

		K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
P			●	●	●			○	○	○	○	○		●		
M								●	●	●	●	●		○		
K			○	○		●	●							○		
N		○											●		●	
S		●							●	●	●	●				●
H																

DCGR • DPGR

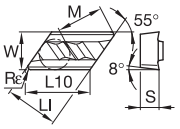




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	M mm	M in	Rε mm	Rε in
DCGR150404	DPGR431	12,70	1/2	15,50	.610	4,76	3/16	6,94	.273	0,4	1/64
DCGR150408	DPGR432	12,70	1/2	15,50	.610	4,76	3/16	6,48	.255	0,8	1/32
DCGR150412	DPGR433	12,70	1/2	15,50	.610	4,76	3/16	6,01	.237	1,2	3/64

KCGR • NPGR

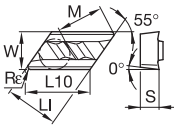




ISO catalog number	ANSI catalog number	LI mm	LI in	L10 mm	L10 in	W mm	W in	S mm	S in	M mm	M in	Rε mm	Rε in
	right hand												
KCGR110304R08	NPGR51R	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,10	.358	0,4	1/64
KCGR110308R08	NPGR52R left hand	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,66	.341	0,8	1/32
KCGR110304L08	NPGR51L	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,10	.358	0,4	1/64
KCGR110308L08	NPGR52L	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,66	.341	0,8	1/32

KNGX • NPR/L





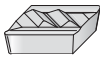
ISO catalog number	ANSI catalog number	LI mm	LI in	L10 mm	L10 in	W mm	W in	S mm	S in	M mm	M in	Rε mm	Rε in
	right hand												
KNGX150401R15	NPR1305	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,76	.542	0,1	.005
KNGX150402R15	NPR1308	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,67	.538	0,2	.008
KNGX150404R20	NPR131F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,44	.529	0,4	1/64
KNGX150408R20	NPR132F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,98	.511	0,8	1/32
KNGX150408R25	NPR132N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,98	.511	0,8	1/32
KNGX220404R25	NPR331N	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,91	.784	0,4	1/64
KNGX220408R32	NPR332	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,47	.767	0,8	1/32
KNGX220408R25	NPR332N left hand	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,47	.767	0,8	1/32
KNGX150401L15	NPL1305	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,76	.542	0,1	.005
KNGX150404L20	NPL131F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,44	.529	0,4	1/64
KNGX150408L20	NPL132F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,98	.511	0,8	1/32
KNGX150408L25	NPL132N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,98	.511	0,8	1/32
KNGX220404L25	NPL331N	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,91	.784	0,4	1/64
KNGX220408L32	NPL332	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,47	.767	0,8	1/32
KNGX220408L20	NPL332F	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,47	.767	0,8	1/32
KNGX220408L25	NPL332N	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,47	.767	0,8	1/32

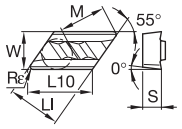
Application Specific

● first choice
○ alternate choice

P			●	●	●			○	○	○	○	○		●																
M								●	●	●	●	●		○																
K		○	○		●	●								○																
N	○												●		●															
S	●							●	●	●	●																			
H																														

KNUX • NPR/L

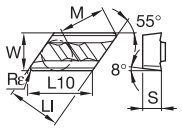




ISO catalog number	ANSI catalog number	LI mm	LI in	L10 mm	L10 in	W mm	W in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
	right hand																											
KNUX150405R20	NPR13M05F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,32	.525	0,5	.020	●		●	●			●	●		●					
KNUX150405R25	NPR13M05N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,32	.525	0,5	.020	●		●	●						●					
KNUX150410R20	NPR13M10F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039				●											
KNUX150410R25	NPR13M10N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039	●			●				●		●					
KNUX150410R32	NPR13M10R	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039				●											
KNUX220405R25	NPR33M05N	18,62	.733	22,73	.895	9,53	.375	4,76	3/16	19,79	.779	0,5	.020	●														
	left hand																											
KNUX150405L20	NPL13M05F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,32	.525	0,5	.020	●		●	●											
KNUX150405L25	NPL13M05N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,32	.525	0,5	.020	●		●	●				●		●					
KNUX150405L32	NPL13M05R	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	13,32	.525	0,5	.020				●											
KNUX150410L20	NPL13M10F	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039				●											
KNUX150410L25	NPL13M10N	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039	●		●	●				●		●					
KNUX150410L32	NPL13M10R	12,70	.500	15,44	.608	9,53	.375	4,76	3/16	12,74	.502	1,0	.039				●											

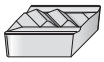
KCGX • NPR/L

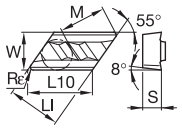




ISO catalog number	ANSI catalog number	LI mm	LI in	L10 mm	L10 in	W mm	W in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
	right hand																											
KCGX110301R15	NPR505	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,43	.371	0,1	.005	●		●	●				●	●	●	●		●		●
KCGX110302R15	NPR508	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,34	.368	0,2	.008								●	●	●	●	●	●		●
KCGX110304R15	NPR51	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,11	.359	0,4	1/64	●		●	●			●	●	●	●	●	●	●		●
KCGX110308R15	NPR52	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,65	.341	0,8	1/32	●			●	●			●	●	●	●		●		
	left hand																											
KCGX110301L15	NPL505	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,43	.371	0,1	.005	●							●	●	●	●		●		●
KCGX110302L15	NPL508	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,34	.368	0,2	.008								●	●	●	●		●		●
KCGX110304L15	NPL51	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,11	.359	0,4	1/64	●		●	●			●	●	●	●	●	●	●		●
KCGX110308L15	NPL52	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,65	.341	0,8	1/32	●		●	●				●	●	●	●				

KCUX • NPR/L



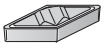


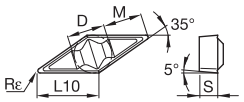
ISO catalog number	ANSI catalog number	LI mm	LI in	L10 mm	L10 in	W mm	W in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
	right hand																											
KCUX110302R15	NPR5M02	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,32	.367	0,2	.008	●		●					●		●					
KCUX110305R15	NPR5M05	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,97	.353	0,5	.020	●	●	●	●	●		●	●		●					
	left hand																											
KCUX110302L15	NPL5M02	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	9,32	.367	0,2	.008	●		●					●		●					
KCUX110305L15	NPL5M05	9,53	.375	11,60	.457	6,35	.250	3,18	1/8	8,97	.353	0,5	.020	●		●		●		●	●		●			●		

● first choice
○ alternate choice

P			●	●	●			○	○	○	○	○		●		●
M								●	●	●	●	●		○		
K			○	○		●	●							○		
N		○											●		●	
S		●							●	●	●	●				●
H																

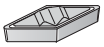
VBMR

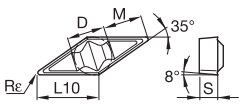




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
VBMR110302	VBMR2205	6,35	1/4	11,07	.436	3,18	1/8	6,91	.272	0,2	.008								●	●	●	●				
VBMR110304	VBMR221	6,35	1/4	11,07	.436	3,18	1/8	6,46	.254	0,4	1/64			●	●			●	●	●	●	●		●		
VBMR110308	VBMR222	6,35	1/4	11,07	.436	3,18	1/8	5,54	.218	0,8	1/32				●				●		●			●		

VCMR

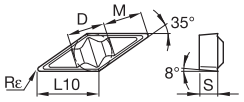




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
VCMR160404	VCMR331	9,53	3/8	16,61	.654	4,76	3/16	10,15	.400	0,4	1/64							●	●	●	●	●		●		
VCMR160408	VCMR332	9,53	3/8	16,61	.654	4,76	3/16	9,23	.363	0,8	1/32					●		●	●	●	●	●		●		

VPGN

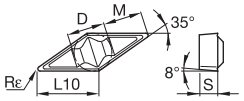




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
VCGN160404	VPGN331	9,53	3/8	16,61	.654	4,76	3/16	10,15	.400	0,4	1/64															●
VCGN160408	VPGN332	9,53	3/8	16,61	.654	4,76	3/16	9,23	.363	0,8	1/32															●
VCGN160412	VPGN333	9,53	3/8	16,61	.654	4,76	3/16	8,31	.327	1,2	3/64															●

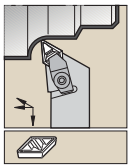
VCGR • VPGR

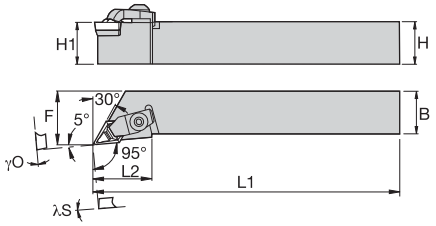




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	M mm	M in	Rε mm	Rε in	K68	KC9105	KC9110	KC9125	KC9315	KC9320	KC9225	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KB1345	KD1425
VCGR160402	VPGR3305	9,53	3/8	16,61	.654	4,76	3/16	10,60	.417	0,2	.008	●		●	●			●	●	●	●	●	●	●		
VCGR160404	VPGR331	9,53	3/8	16,61	.654	4,76	3/16	10,15	.400	0,4	1/64	●	●	●	●			●	●	●	●	●	●	●		●
VCGR160408	VPGR332	9,53	3/8	16,61	.654	4,76	3/16	9,23	.363	0,8	1/32	●	●	●	●	●		●	●	●	●	●	●	●		●
VCGR160412	VPGR333	9,53	3/8	16,61	.654	4,76	3/16	8,31	.327	1,2	3/64	●		●	●	●		●	●	●	●	●	●	●		●
VCGR160416	VPGR334	9,53	3/8	16,61	.654	4,76	3/16	7,38	.291	1,6	1/16								●		●					

Application Specific

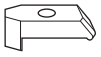




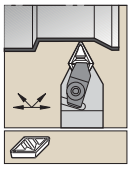
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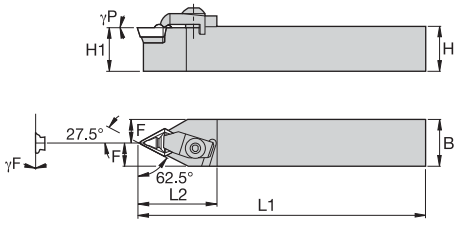
NDLP -5°





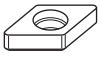

catalog number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand															
NDLPR164C	1.000	1.000	1.250	5.00	1.38	—	0.0	0.0	DP..432	SM414	S111	1/16	CM116	S532	5/32
NDLPR164D	1.000	1.000	1.250	6.00	1.38	—	0.0	0.0	DP..432	SM414	S111	1/16	CM116	S532	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

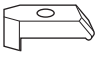




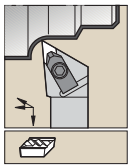
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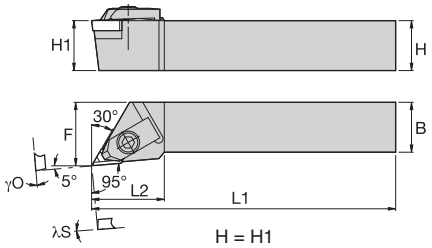
NDPP 27.5°





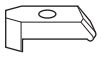

catalog number	H	B	F	L1	L2	B3	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
NDPPN164D	1.000	1.000	.500	6.00	1.59	—	0.0	0.0	DP..432	SM414	S111	1/16	CM116	S532	5/32
NDPPN204D	1.250	1.250	.625	6.00	1.59	—	0.0	0.0	DP..432	SM414	S111	1/16	CM116	S532	5/32





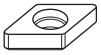
NKLC -5°





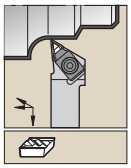

catalog number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand															
NKLCR0805V	.500	.500	.750	3.50	.88	—	0.0	0.0	NP..51R	SM285	S959	—	CM79	S524	1/8
NKLCR1005B	.625	.625	.750	4.50	.88	—	0.0	0.0	NP..51R	SM285	S959	—	CM79	S524	1/8
NKLCR1205A	.750	.750	1.000	4.00	.88	—	0.0	0.0	NP..51R	SM285	S959	—	CM68	S524	1/8
NKLCR1205B	.750	.750	1.000	4.50	.88	—	0.0	0.0	NP..51R	SM285	S959	—	CM68	S524	1/8
NKLCR1605C	1.000	1.000	1.250	5.00	.88	—	0.0	0.0	NP..51R	SM285	S959	—	CM68	S524	1/8
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

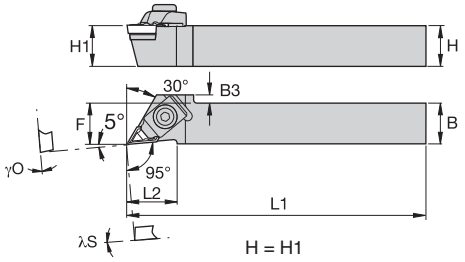
NKLN -5°






catalog number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand															
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
NKLNR163D	1.000	1.000	1.250	6.00	1.44	—	-2.0	-5.0	NPR332	SM268	SL344	—	CM65	S625	5/32
left hand															
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
NKLNL163D	1.000	1.000	1.250	6.00	1.44	—	-2.0	-5.0	NPL332	SM267	SL344	—	CM65	S625	5/32



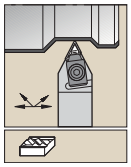


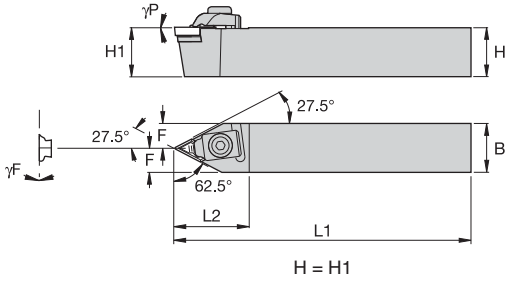
NKLC-F -5°





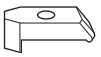

catalog number	H	B	F	L1	L2	B3	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
NKLCRF0805D	.500	.500	.500	6.00	.75	.15	0.0	0.0	NP..51R	SM285	S959	—	CM180	S524	1/8
NKLCRF1005B	.625	.625	.625	4.50	.75	—	0.0	0.0	NP..51R	SM285	S959	—	CM180	S524	1/8
left hand															
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



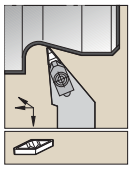


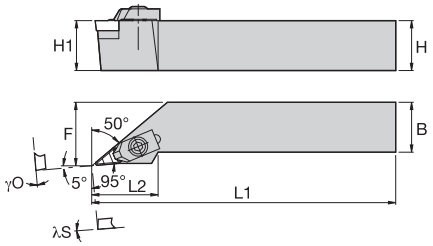
NKPC 27.5°





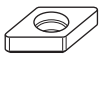

catalog number	H	B	F	L1	L2	B3	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
NKPCN0805V	.500	.500	.250	3.50	1.13	—	0.0	0.0	NP..51R	SM285	S959	—	CM79	S524	1/8
NKPCN1205B	.750	.750	.375	4.50	1.13	—	0.0	0.0	NP..51R	SM285	S959	—	CM68	S524	1/8





H = H1

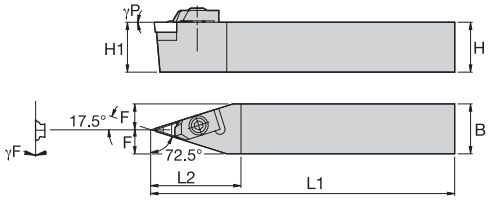
NVLC -5°





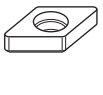

catalog number	H	B	F	L1	L2	B3	γO°	λS°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand															
NVLCR123B	.750	.750	1.000	4.50	1.44	—	0.0	0.0	VP..332	SM412	S959	—	CM113	S412	5/32
NVLCR163D	1.000	1.000	1.250	6.00	1.44	—	0.0	0.0	VP..332	SM412	S959	—	CM113	S412	5/32
NVLCR203D	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

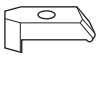




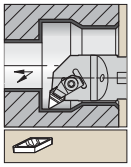
H = H1

NVVC 17.5°

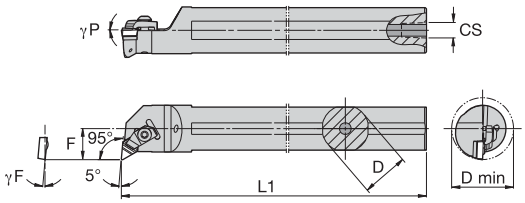




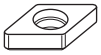

catalog number	H	B	F	L1	L2	B3	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
NVVCN163D	1.000	1.000	.497	6.00	1.62	—	0.0	0.0	VP..332	SM412	S959	—	CM113	S412	5/32
NVVCN203D	1.250	1.250	.622	6.00	1.62	—	0.0	0.0	VP..332	SM412	S959	—	CM113	S412	5/32
NVVCN243D	1.500	1.500	.747	6.00	1.62	—	0.0	0.0	VP..332	SM412	S959	—	CM113	S412	5/32

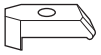


Steel shank with
through coolant.

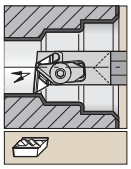


A-NDLP -5°

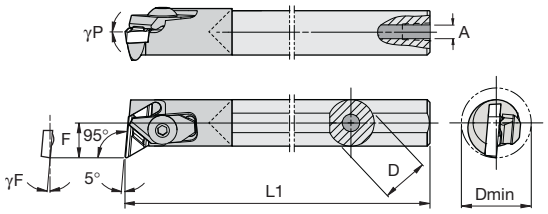





catalog number	D	D min	F	L1	L	CD	A	CS	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand																	
A20NDLPR4	1.250	1.585	.875	14.00	—	—	—	1/4-18 NPT	-3.0	0.0	DP..432	SM414	S111	1/16	CM118	S532	5/32
A24NDLPR4	1.500	1.835	1.000	14.00	—	—	—	1/4-18 NPT	-2.0	0.0	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



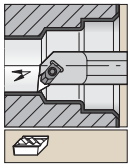
Carbide shank with
through coolant.



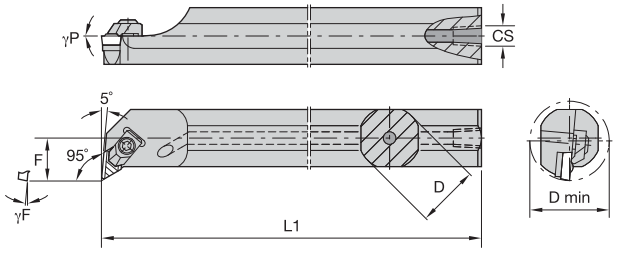
E-NEL -5°




catalog number	D	D min	F	L1	L	CD	A	CS	γF°	γP°	gage insert	clamp	clamp screw	hex (inch)
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



Steel shank with
through coolant.

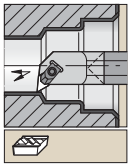


A-NKLC -5°

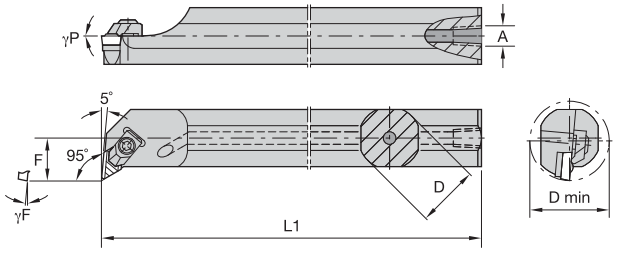




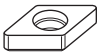

catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A10NKLCR05	.625	.900	.500	10.00	1/8-27 NPT	-5.00	0.0	NP..51L	**SM286**	**S959**	—	**CM79**	**S524**	1/8
A12NKLCR05	.750	.980	.562	10.00	1/8-27 NPT	-5.00	0.0	NP..51L	**SM286**	**S959**	—	**CM68**	**S524**	1/8
A16NKLCR05	1.000	1.300	.750	12.00	1/4-18 NPT	-3.00	0.0	NP..51L	**SM286**	**S959**	—	**CM68**	**S524**	1/8
A20NKLCR05	1.250	1.580	.875	14.00	1/4-18 NPT	-3.00	0.0	NP..51L	**SM286**	**S959**	—	**CM68**	**S524**	1/8
A24NKLCR05	1.500	1.870	1.000	14.00	1/4-18 NPT	-2.00	0.0	NP..51L	**SM286**	**S959**	—	**CM68**	**S524**	1/8
A32NKLCR05	2.000	2.370	1.250	16.00	1/4-18 NPT	-2.00	0.0	NP..51L	**SM286**	**S959**	—	**CM68**	**S524**	1/8
left hand														
A10NKLCL05	.625	.900	.500	10.00	1/8-27 NPT	-5.00	0.0	NP..51R	**SM285**	**S959**	—	**CM71**	**S524**	1/8
A12NKLCL05	.750	.980	.562	10.00	1/8-27 NPT	-5.00	0.0	NP..51R	**SM285**	**S959**	—	**CM68**	**S524**	1/8
A16NKLCL05	1.000	1.300	.750	12.00	1/4-18 NPT	-3.00	0.0	NP..51R	**SM285**	**S959**	—	**CM68**	**S524**	1/8
A24NKLCL05	1.500	1.870	1.000	14.00	1/4-18 NPT	-2.00	0.0	NP..51R	**SM285**	**S959**	—	**CM68**	**S524**	1/8
A32NKLCL05	2.000	2.370	1.250	16.00	1/4-18 NPT	-2.00	0.0	NP..51R	**SM285**	**S959**	—	**CM68**	**S524**	1/8



Carbide shank with through coolant.

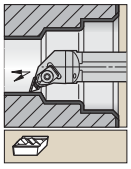


E-NKLC -5°

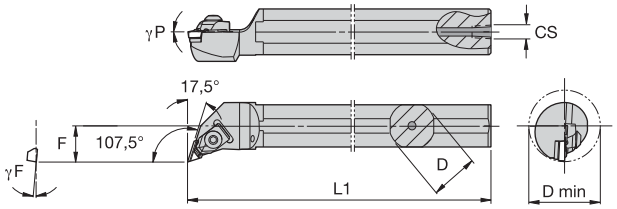





catalog number	D	D min	F	L1	A	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
E08NKLCR05	.500	.660	.375	8.00	.187	-5.0	0.0	NP..51L	–	–	–	**CM106**	**S518**	3/32
E10NKLCR05	.625	.900	.500	10.00	.218	-5.0	0.0	NP..51L	**SM286**	**S959**	–	**CM79**	**S524**	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



Steel shank with through coolant.

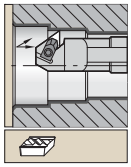


A-NKQC -17.5°

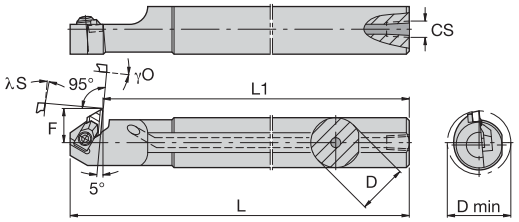




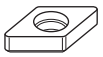

catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand														
A08NKQCR05	.500	.670	.375	8.00	1/16-27 NPT	-6.0	0.0	NP..51L	–	–	–	**CM112**	**S518**	3/32
A12NKQCR05	.750	.980	.562	10.00	1/8-27 NPT	-6.0	0.0	NP..51L	**SM286**	**S959**	–	**CM68**	**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



Steel shank with through coolant.

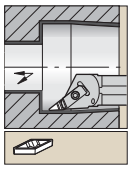


A-NKXC -5°

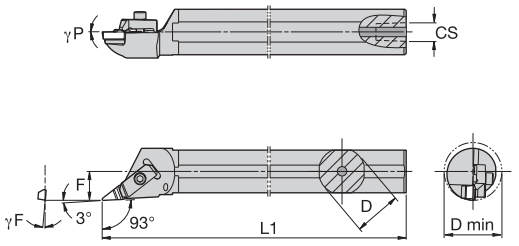




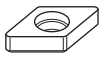

catalog number	D	D min	F	L1	L	CS	λS°	γO°	gage insert	shim	shim screw	hex (mm)	clamp	clamp screw	hex (mm)
right hand															
A12NKXCR05	.750	1.060	.625	10.00	10.69	1/8-27 NPT	-5.0	0.0	NP..51R	**SM285**	**S959**	—	**CM79**	**S524**	1/8
A16NKXCR05	1.000	1.300	.750	12.00	12.69	1/4-18 NPT	-5.0	0.0	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

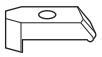


Steel shank with through coolant.

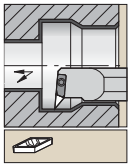


A-NVJC -3°

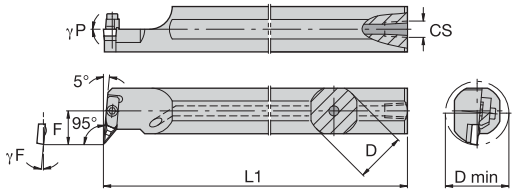




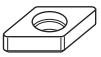

catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20NVJCR3	1.250	1.774	.765	14.00	1/4-18 NPT	-2.0	0.0	VP..332	**SM412**	**S959**	—	**CM113**	**S412**	5/32

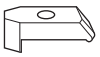


Steel shank with
through coolant.

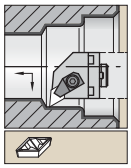


A-NVLC -5°

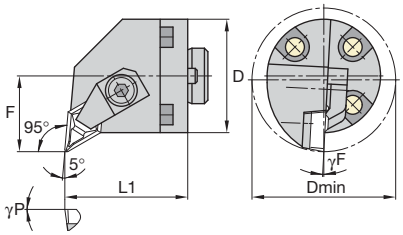





catalog number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
A20NVLCR3	1.250	1.830	1.125	14.00	1/4-18 NPT	-2.0	0.0	VP..332	**SM412**	**S959**	—	**CM113**	**S412**	5/32
A24NVLCR3	1.500	2.120	1.250	14.00	1/4-18 NPT	-2.0	0.0	VP..332	**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

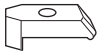


With through coolant.

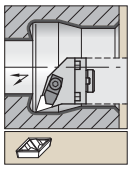


H-NDLP -5°

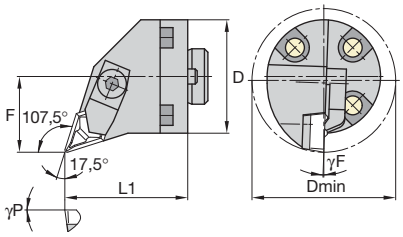





catalog number	D	D min	F	L1	L	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
H20NDLPR4W	1.250	1.580	.875	1.625	—	-3.0	0.0	DP..432	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H24NDLPR4W	1.500	1.870	1.000	1.625	—	-2.0	0.0	DP..432	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
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

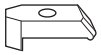


With through coolant.

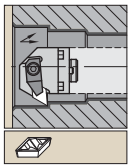


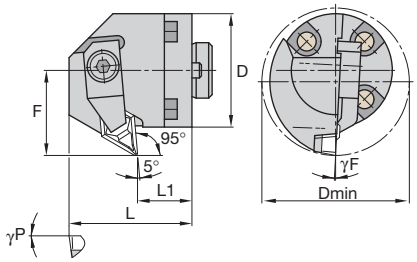
H-NDQP -17.5°






catalog number	D	D min	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



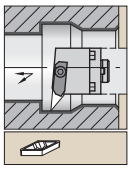


H-NDXP -5°

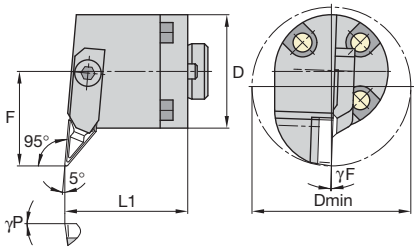





catalog number	D	D min	F	L1	L	γF°	γP°	gage insert	shim	shim screw	hex (inch)	clamp	clamp screw	hex (inch)
right hand														
H20NDXPR4W	1.250	1.705	1.000	.750	1.62	-3.0	0.0	DP..432	**SM414**	**S111**	1/16	**CM118**	**S532**	5/32
H24NDXPR4W	1.500	2.000	1.125	.750	1.62	0.0	0.0	DP..432	**SM414**	**S111**	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

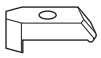


With through coolant.



H-NVLP -5°






catalog number	D	D min	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



K-Lock™ Inserts

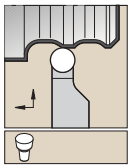
Features and Benefits

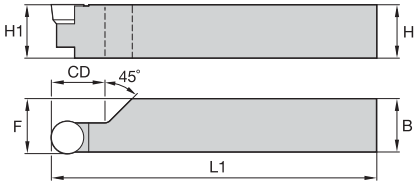
- K-Lock inserts are ideal for deep grooving and profiling.
- A unique insert clamping system enables unimpeded chip flow.
- Available in molded and ground peripheries.



● first choice
○ alternate choice

| | | |

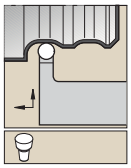


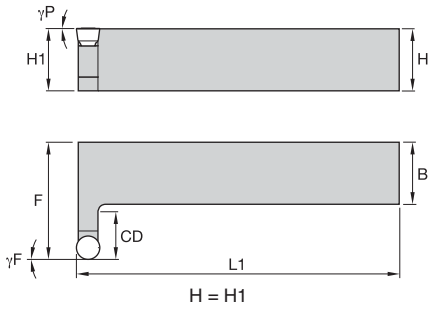


H = H1

TRAO

catalog number	H1	B	F	L1	CD	γF°	γP°	gage insert
right hand								
TRAOR1615D	1.00	1.00	1.003	6.00	.50	0.0	0.0	RC..152
TRAOR2015D	1.25	1.25	1.253	6.00	.50	0.0	0.0	RC..152
TRAOR2415E	1.50	1.50	1.503	7.00	.50	0.0	0.0	RC..152
TRAOR162D	1.00	1.00	1.016	6.00	.75	0.0	0.0	RC..23
TRAOR202D	1.25	1.25	1.266	6.00	.75	0.0	0.0	RC..23
TRAOR242E	1.50	1.50	1.516	7.00	.75	0.0	0.0	RC..23
TRAOR163D	1.00	1.00	1.020	6.00	.75	0.0	0.0	RC..35
TRAOR203D	1.25	1.25	1.270	6.00	.75	0.0	0.0	RC..35
TRAOR243E	1.50	1.50	1.520	7.00	.75	0.0	0.0	RC..35
TRAOR164D	1.00	1.00	1.032	6.00	1.00	0.0	0.0	RC..46
TRAOR204D	1.25	1.25	1.282	6.00	1.00	0.0	0.0	RC..46
TRAOR244E	1.50	1.50	1.532	7.00	1.00	0.0	0.0	RC..46
left hand								
TRAOL1615D	1.00	1.00	1.003	6.00	.50	0.0	0.0	RC..152
TRAOL2015D	1.25	1.25	1.253	6.00	.50	0.0	0.0	RC..152
TRAOL2415E	1.50	1.50	1.503	7.00	.50	0.0	0.0	RC..152
TRAOL162D	1.00	1.00	1.016	6.00	.75	0.0	0.0	RC..23
TRAOL202D	1.25	1.25	1.266	6.00	.75	0.0	0.0	RC..23
TRAOL242E	1.50	1.50	1.516	7.00	.75	0.0	0.0	RC..23
TRAOL163D	1.00	1.00	1.020	6.00	.75	0.0	0.0	RC..35
TRAOL203D	1.25	1.25	1.270	6.00	.75	0.0	0.0	RC..35
TRAOL243E	1.50	1.50	1.520	7.00	.75	0.0	0.0	RC..35
TRAOL164D	1.00	1.00	1.032	6.00	1.00	0.0	0.0	RC..46
TRAOL204D	1.25	1.25	1.282	6.00	1.00	0.0	0.0	RC..46
TRAOL244E	1.50	1.50	1.532	7.00	1.00	0.0	0.0	RC..46

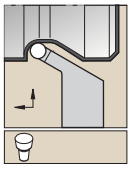


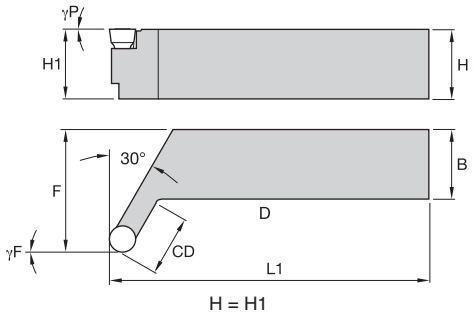


TRHO

catalog number	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
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
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.

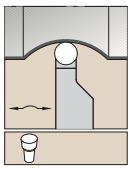


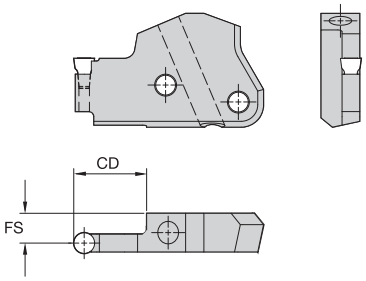


TRTO

catalog number	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
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
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

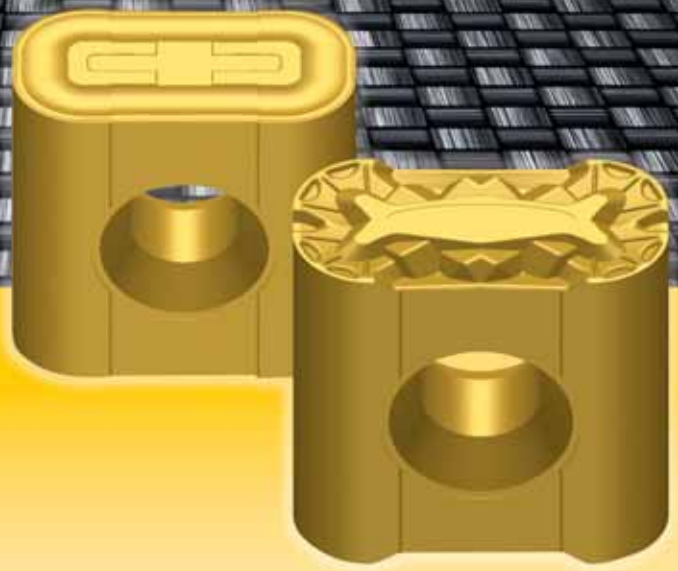
NOTE: Left-hand holders are available as specials.





TRM

catalog number	CD mm	CD in	FS mm	FS in	cartridge size	gage insert
right hand						
TRM50R0432M	32	1.25	9,62	.379	50	RCMK152
TRM50R0620M	19	.75	8,98	.354	50	RCMK23
TRM50R0632M	32	1.25	8,98	.354	50	RCMK-23
TRM50R0640M	38	1.50	8,98	.354	50	RCGK23
TRM50R0657M	57	2.25	8,98	.354	50	RCMK-23
TRM50R0720M	19	.75	8,42	.332	50	RCMK-2.55
TRM50R0725M	25	1.00	8,42	.332	50	RCMK-2.55
TRM50R0732M	32	1.25	8,42	.332	50	RCMK-2.55
TRM50R0920M	19	.75	7,64	.301	50	RC_K35
TRM50R0932M	32	1.25	7,65	.301	50	RCMK-35
TRM50R0940M	38	1.50	7,64	.301	50	RC_K35
TRM50R0950M	50	1.95	7,65	.301	50	RCMK-35
TRM50R0957M	57	2.25	7,65	.301	50	RCMK-35
TRM50R1250M	51	2.00	6,25	.246	50	RC_K46
left hand						
TRM50L0432M	32	1.25	9,62	.379	50	RCMK152
TRM50L0620M	19	.75	8,98	.354	50	RCMK23
TRM50L0632M	32	1.25	8,98	.354	50	RCMK-23
TRM50L0640M	38	1.50	8,98	.354	50	RCGK23
TRM50L0657M	57	2.25	8,98	.354	50	RCMK-23
TRM50L0720M	19	.75	8,42	.332	50	RCMK-2.55
TRM50L0725M	25	1.00	8,42	.332	50	RCMK-2.55
TRM50L0732M	32	1.25	8,42	.332	50	RCMK-2.55
TRM50L0920M	19	.75	7,64	.301	50	RC_K35
TRM50L0932M	32	1.25	7,65	.301	50	RCMK-35
TRM50L0940M	38	1.50	7,64	.301	50	RC_K35
TRM50L0950M	50	1.95	7,65	.301	50	RCMK-35
TRM50L0957M	57	2.25	7,65	.301	50	RCMK-35
TRM50L1250M	51	2.00	6,25	.246	50	RC_K46



Kennametal™ Tools for Railways and Wheel Machining

Kennametal offers a complete line of tooling for wheel and axle maintenance in railroad shops. All tools incorporate the latest in tooling technology for maximum metal removal and higher productivity. All tools are proven performers in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs. Included in this range are tools for reconditioning mounted wheel sets, wheel boring, wheel truing, axle turning, and journal burnishing.

Visit **www.kennametal.com** or contact your local Authorized Kennametal Distributor.

www.kennametal.com

KENNAMETAL®



Kendex™ Mini Boring Bars

Primary Application

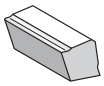
Ground inserts in their neutral position and the precision insert pocket combine to ensure superior surface finishes. The unique system design protects the second cutting edge from damage while the first edge is in operation.

Features and Benefits

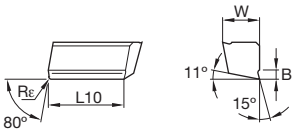
- Kendex mini boring bars are specially designed to finish bore diameters as small as .250".
- Kendex mini inserts contain two precision ground cutting edges.
- Inserts are available in uncoated and PVD coated grades.

● first choice
○ alternate choice

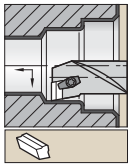
P		○
M		●
K	○	○
N	●	
S	●	●
H		



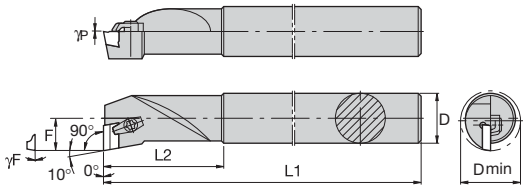
■ BPGF



ISO catalog number	ANSI catalog number	L10 mm	L10 in	W mm	W in	Rε mm	Rε in	B mm	B in	K68	KC720
right hand											
BPGF030202R14	BPGF030202R	3,00	.118	2,00	.079	0,20	.008	1,40	.055	●	●
BPGF050302R12	BPGF050302R	4,50	.177	2,50	.098	0,20	.008	1,20	.047	●	●
left hand											
BPGF030201L14	BPGF030201L	3,00	.118	2,00	.079	0,05	.002	1,40	.055	●	●
BPGF030202L14	BPGF030202L	3,00	.118	2,00	.079	0,20	.008	1,40	.055	●	●
BPGF050301L12	BPGF050301L	4,50	.177	2,50	.098	0,05	.002	1,20	.047	●	●
BPGF050302L12	BPGF050302L	4,50	.177	2,50	.098	0,20	.008	1,20	.047	●	●
BPGF050304L16	BPGF050304L	4,50	.177	2,50	.098	0,40	.016	1,60	.063	●	●
BPGF070304L18	BPGF070304L	7,00	.276	2,50	.098	0,40	.016	1,80	.071	●	●
BPGF080404L22	BPGF080404L	8,00	.315	4,00	.157	0,40	.016	2,20	.087		●



Steel shank without through coolant.

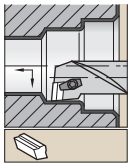


S-KBFP 0°

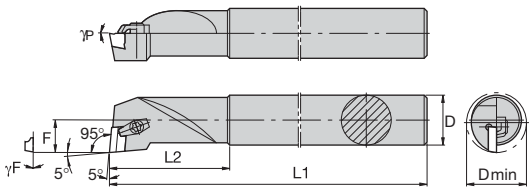


catalog number	D	D min	F	L1	L2	γF°	γP°	gage insert	clamp assembly	wrench size clamp screw
right hand										
S04KBFPR03	.250	.250	.128	2.375	.625	0.0	0.0	BP..030202L	**CE1031**	T6
S04KBFPR05	.250	.315	.177	2.375	.625	0.0	0.0	BP..050302L	**CE1014**	T8
S05KBFPR05	.313	.394	.216	3.125	.750	0.0	0.0	BP..050302L	**CE1014**	T8

Application Specific



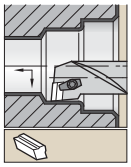
Steel Shank without through coolant.



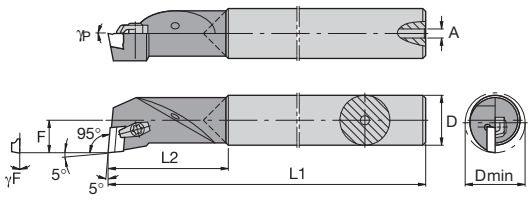
S-KBLP -5°



catalog number	D	D min	F	L1	L2	γF°	γP°	gage insert	clamp assembly	wrench size clamp screw
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



Carbide shank with
through coolant.



E-KBLP -5°



catalog number	D	D min	F	L1	L2	A	γF°	γP°	gage insert	clamp assembly	wrench size clamp screw
right hand											
E04KBLPR03	.250	.250	.128	3.938	1.220	.06	0.0	0.0	BP..030202L	**CE1031**	T6
E04KBLPR05	.250	.315	.177	3.938	.630	.06	0.0	0.0	BP..050302L	**CE1014**	T8
E05KBLPR05	.313	.394	.216	4.922	.787	.08	0.0	0.0	BP..050302L	**CE1014**	T8
left hand											
E04KBLPL05	.250	.315	.177	3.938	.630	.06	0.0	0.0	BP..050302R	**CE1014**	T8
E05KBLPL05	.313	.394	.216	4.922	.787	.08	0.0	0.0	BP..050302R	**CE1014**	T8



Wheel Reprofiling/Wheelset Truing

Primary Application

Kennametal offers a complete line of tooling for wheel and axle maintenance in railroad shops. All tools incorporate the latest in tooling technology for maximum metal removal and higher productivity. All tools are proven performers in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs.

Features and Benefits

Versatility

Included in the new expanded line are tools for reconditioning mounted wheel sets, wheel boring, wheel turning, wheel truing, axle turning, and journal burnishing.

Advantages

Machining conditions for these tools vary with the type of service the wheel has seen. Among the problems encountered are skid flat areas, overheating of spinning wheels, accidental torch burns, excessive mushroom and rollovers that are hardened by unusual hump retarder pressure and mismatched wheels that cause excessive wear on the side of the flange. Each of these conditions require a different machining speed and depth of cut. Even under these tough conditions, Kennametal tools have produced superior results through reduced production time and lower maintenance costs.



Wheel Lathe Tooling

Kennametal railroad tooling incorporates a unique locking unit design developed through years of testing on all types of wheel lathes and machining wheels with all types of tread surfaces.

This heavy-duty, rugged design has proven to be effective in reducing machining costs on tread turning applications, the most severe machining operation encountered in wheel and axle shops.

Strong inserts, with raised chipbreaker land and honed cutting edges, offer more effective chip control and a stronger cutting edge. Combining this tool geometry with Kennametal's grade selection delivers higher wheel turning productivity.



Wheelset Reconditioning

Advantages of Kennametal Wheel Lathe Tools:

- No top clamp to wear out or interfere with chip flow.
- Insert locks against two walls in the toolholder to prevent insert movement under heavy cutting loads.
- Hardened steel locking unit provides positive insert seating and holder protection.
- Fast, trouble-free insert indexing — just unlock one screw to release the insert.
- Quick removal of the steel locking unit and insert for cleaning or replacement.
- Heavy-duty steel locking unit design ensures longer life and helps reduce operating costs.
- Fewer parts to inventory.
- Toolholders and steel locking units, made from heat-treated alloy steel, provide support to withstand severe roughing cuts on work-hardened wheels.





LNUX-RRH



LNUX-RRP



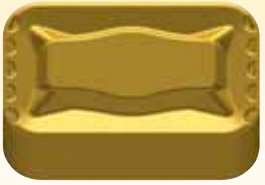
KRR6586-71



KRR6586-75



LNUX-RRSM



KRR6586-65

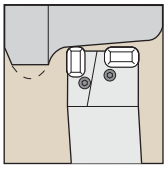


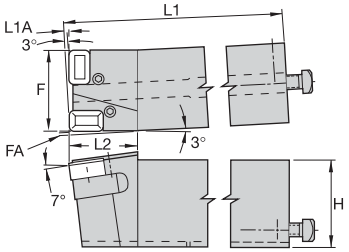
KRR6586-52



KRR6586-50

- Portal-type wheel lathe is a fully automatic, heavy-duty wheel lathe. An integrated measuring device determines wheel set profile wear to establish minimum stock removal.
- The portal-type machine bed enables roll-through operation.
- This tooling is suitable for economical machining of wheel sets for locomotives, transit, passenger, and freight cars.





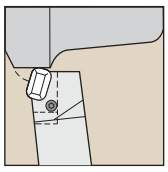
Tread Profile Turning

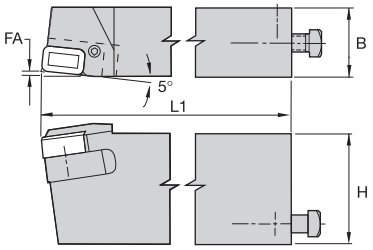
		H		F		L1		L2		FA		L1A		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
1015754	HUWTCL	80,00	3.150	76,20	3.000	275,00	10.827	63,50	2.500	3,00	.118	3,00	.118	KRR6586__
1015723	HUWTCR	80,00	3.150	76,20	3.000	275,00	10.827	63,50	2.500	3,00	.118	3,00	.118	KRR6586__

Spare Parts

catalog number	shim	shim	lock screw	cup point socket set screw	brass plug	heavy-duty clamp screw
HUWTCL	SU7	SU8	S1006PKG	S751	S1033	S1014
HUWTCR	SU6	SU8	S1006PKG	S751	S1033	S1014

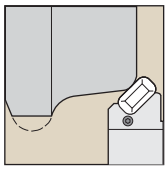
NOTE: Requires two inserts.
See page F84 for insert selection.

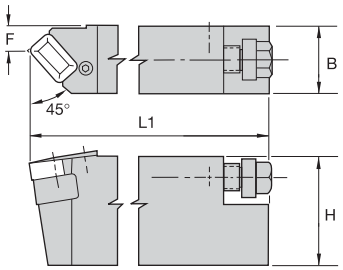




Flange Topping

		H		B		L1		FA		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1
1015755	**HUWFTR**	80,00	3.150	50,00	1.969	265,00	10.433	3,53	.139	KRR6586__
1015756	**HUWFTL**	80,00	3.150	50,00	1.969	265,00	10.433	3,53	.139	KRR6586__





Mushroom Removal

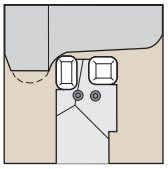
		H		B		F		L1		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1
1015685	**HUMRR**	80,00	3.150	50,00	1.969	19,50	.768	265,00	10.433	KRR6586__
1015686	**HUMRL**	80,00	3.150	50,00	1.969	19,50	.768	265,00	10.433	KRR6586__

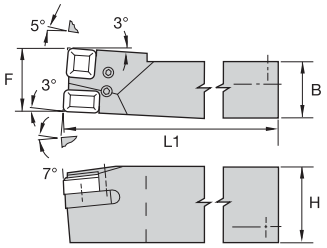
NOTE: See page F84 for insert selection.

- Tools and inserts are specifically designed for the feeds and speeds normally used on this type of lathe.
- Style HUTC is used for profiling the tread contours on the wheel, and style HUFT is used for normal flange topping.
- For heavy flange topping it may be necessary to use two flange-topping tools, styles HUFT-A and HUFT-B.



Hegenscheidt Portal-Type Wheel Lathe

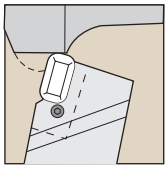


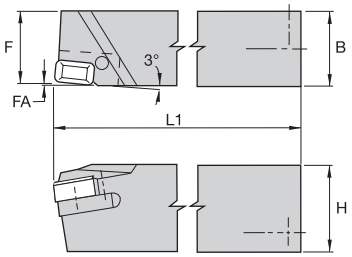


Tread Profile Turning

		H		B		F		L1			
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1	insert 2
1015757	HUTCR	69,85	2.750	50,00	1.969	57,15	2.250	275,00	10.827	KRR6586__	KRR86650
1015758	HUTCL	69,85	2.750	50,00	1.969	57,15	2.250	275,00	10.827	KRR6586__	KRR86650

NOTE: Requires 2 inserts.





Flange Topping

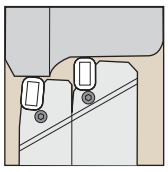
		H		B		F		L1		FA		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
1015717	HUFTR	69,85	2.750	60,00	2.362	58,17	2.290	250,00	9.843	1,70	.067	KRR6586__
1015718	HUFTL	69,85	2.750	60,00	2.362	58,17	2.290	250,00	9.843	1,70	.067	KRR6586__

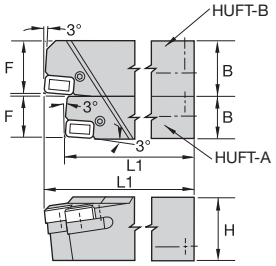
Spare Parts

catalog number	steel locking unit	cone point screw	optional set screw	optional brass slug	optional square head bolt
HUFTR	SU2	S1006PKG	S1015	S1033	S1014
HUFTL	SU3	S1006PKG	S1015	S1033	S1014

NOTE: See page F84 for insert selection.

Application Specific





Heavy Flange Topping

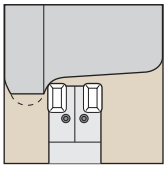
		H		B		F		L1		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1
1015719	**HUFTRA**	69,85	2.750	47,00	1.850	45,21	1.780	228,60	9.000	KRR6586__
3385736	**HUFTRB**	69,85	2.750	60,00	2.362	55,12	2.170	250,00	9.843	KRR6586__
3385735	**HUFTLA**	69,85	2.750	47,00	1.850	45,21	1.780	228,60	9.000	KRR6586__
3385737	**HUFTLB**	69,85	2.750	60,00	2.362	55,12	2.170	250,00	9.843	KRR6586__

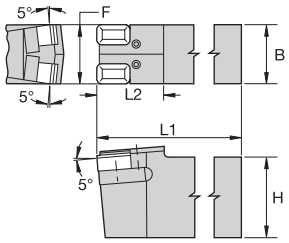
NOTE: See page F84 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Gage location on tool, over insert, is held to +/- .003" (0,08mm).
- No top clamp is used so it won't wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Indexable inserts with pre-formed chipbreakers deliver chip control at optimum feeds and speeds.



Simmons-Niles Wheel Turning Lathe

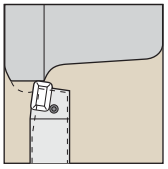


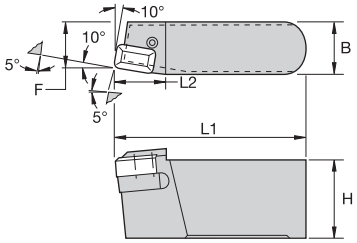


Wheel Tread Contouring

order number	catalog number	H mm	H in	B mm	B in	F mm	F in	L1 mm	L1 in	L2 mm	L2 in	insert 1	steel locking unit	lock screw
1015684	**NUWTC**	76,20	3.000	57,15	2.250	57,15	2.250	412,75	16.250	95,25	3.750	KRR6586__	**SU3**	**S1006PKG**

NOTE: Requires two inserts.
See page F84 for insert selection.

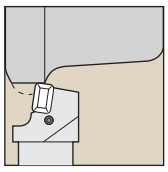


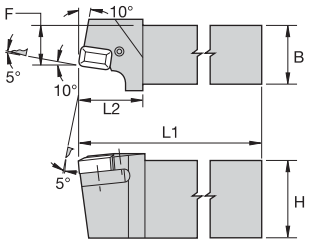


Wheel Flange Topping

order number	catalog number	H mm	H in	B mm	B in	F mm	F in	L1 mm	L1 in	L2 mm	L2 in	insert 1
1015689	**NUFRR**	63,50	2.500	41,28	1.625	36,53	1.438	152,40	6.000	39,62	1.560	KRR6586__
1015690	**NUFRL**	63,50	2.500	41,28	1.625	36,53	1.438	152,40	6.000	39,62	1.560	KRR6586__

NOTE: See page F84 for insert selection.

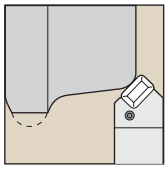


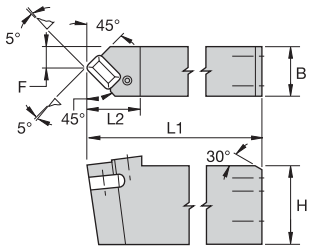


Wheel Flange Roughing

order number	catalog number	H mm	H in	B mm	B in	F mm	F in	L1 mm	L1 in	L2 mm	L2 in	insert 1
1015693	**NUFRAR**	76,20	3.000	57,15	2.250	38,10	1.500	212,85	8.380	63,50	2.500	KRR6586__
1015714	**NUFRAL**	76,20	3.000	57,15	2.250	38,10	1.500	212,85	8.380	63,50	2.500	KRR6586__

NOTE: See page F84 for insert selection.

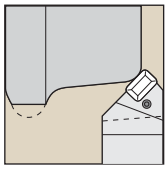


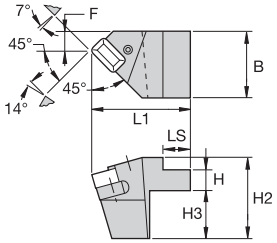


Mushroom Removal

order number	catalog number	H mm	H in	B mm	B in	F mm	F in	L1 mm	L1 in	L2 mm	L2 in	insert 1
3385765	**NUMRAR**	76,20	3.000	47,63	1.875	19,51	.768	311,15	12.250	50,80	2.000	KRR6586__
3385766	**NUMRAL**	76,20	3.000	47,63	1.875	19,51	.768	311,15	12.250	50,80	2.000	KRR6586__

NOTE: See page F84 for insert selection.





Mushroom Removal

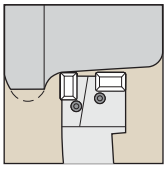
order number	catalog number	H mm	H in	H2 mm	H2 in	H3 mm	H3 in	B mm	B in	F mm	F in	L1 mm	L1 in	LS mm	LS in	insert 1
3385767	**NUMRR**	19,05	.750	76,20	3.000	45,21	1.780	63,50	2.500	19,05	.750	93,52	3.682	25,40	1.000	KRR6586__
3385768	**NUMRL**	19,05	.750	76,20	3.000	45,21	1.780	63,50	2.500	19,05	.750	93,52	3.682	25,40	1.000	KRR6586__

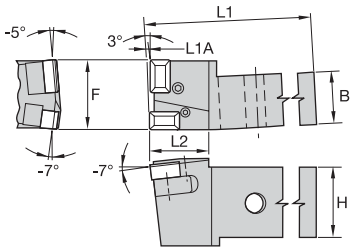
NOTE: See page F84 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Gage location on tool, over insert, is held to +/- .003" (0,08mm).
- No top clamp is used to wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Improved inserts with chip control are offered.



Simmons-Farrel CNC Portal Wheel Lathe





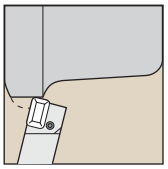
Wheel Tread Contouring

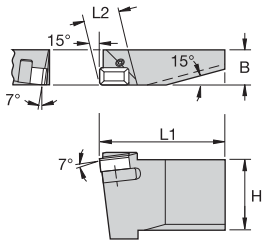
		H		B		F		L1		L2		L1A		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
1015687	FUWTCR	76,20	3.000	57,15	2.250	76,20	3.000	254,00	10.000	66,55	2.620	3,05	.120	KRR6586__
1015688	FUWTCL	76,20	3.000	57,15	2.250	76,20	3.000	254,00	10.000	66,55	2.620	3,05	.120	KRR6586__

Spare Parts

catalog number	steel locking unit	steel locking unit	lock screw
FUWTCR	SU6	SU8	S1006PKG
FUWTCL	SU6	SU8	S1006PKG

NOTE: Requires two inserts.
See page F84 for insert selection.



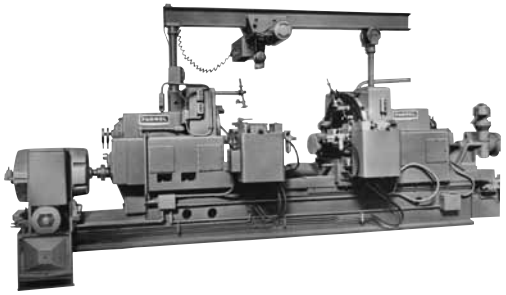


Wheel Flange Topping

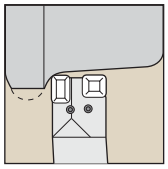
		H		B		L1		L2				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1	steel locking unit	set screw
1015662	FUWFTR	76,20	3.000	38,10	1.500	133,35	5.250	38,10	1.500	KRR6586__	SU4	S1006PKG
1015663	FUWFTL	76,20	3.000	38,10	1.500	133,35	5.250	38,10	1.500	KRR6586__	SU4	S1006PKG

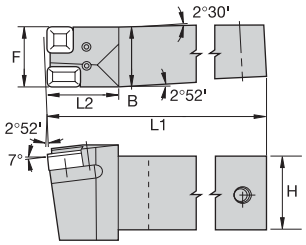
NOTE: See page F84 for insert selection.

- Delivers maximum productivity at minimum operating costs.
- Fast insert indexing is possible with the tool mounted in the tool block.
- Individual steel locking units make it easy to index and lock each insert separately.
- Minimum parts for lower inventory.
- No top clamp is used to wear out or interfere with chip flow.
- Replaceable steel locking unit protects toolholder from damage.
- Indexable inserts with pre-formed chipbreakers deliver chip control at optimum feeds and speeds.



Simmons-Farrel (Sellers) Tracer Wheel Lathe





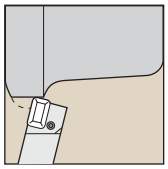
Wheel Tread Contouring

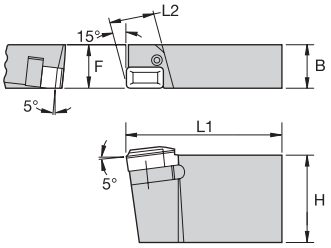
		H		B		F		L1		L2			
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1	insert 2
1015658	SUWTCR	76,20	3.000	57,15	2.250	57,15	2.250	254,00	10.000	66,55	2.620	KRR6586__	KRR86650
1015659	SUWTCL	76,20	3.000	57,15	2.250	57,15	2.250	254,00	10.000	66,55	2.620	KRR6586__	KRR86650

Spare Parts

catalog number	shim	shim	cone point socket set screw	lock screw
SUWTCR	SU2	SU11	S939	S1006PKG
SUWTCL	SU3	SU10	S939	S1006PKG

NOTE: Requires two inserts.
See page F84 for insert selection.





Wheel Flange Topping

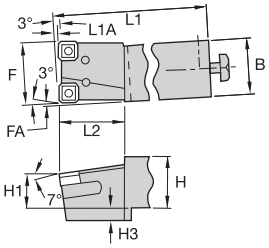
		H		B		F		L1		L2				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1	steel locking unit	cone point set screw
1864582	SUWFTR	76,20	3.000	38,10	1.500	38,10	1.500	133,35	5.250	37,72	1.485	KRR6586__	—	—
1015661	SUWFTL	76,20	3.000	38,10	1.500	38,10	1.500	133,35	5.250	37,72	1.485	KRR6586__	SU5	S1006PKG

NOTE: See page F84 for insert selection.

- Kennametal tooling for underfloor wheel lathes features a steel sliding shim unit. The sliding shim unit holds the insert securely in the pocket, ensures easy insert indexing, and is simple and economical to replace.
- The insert used in these holders, KRR-6610, features improved chip control for safer and easier chip disposal.

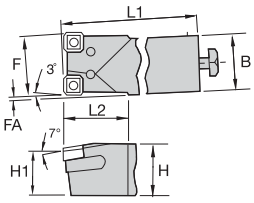


Hegenscheidt Underfloor Wheel Lathe



Model 104 Tread Profile Turning

		H		H1		H3		B		F		L1		L2		FA		L1A		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
1015759	H104R55	49,91	1.965	31,88	1.255	12,00	.472	54,86	2.160	54,86	2.160	250,00	9.843	63,50	2.500	3,00	.118	3,00	.118	KRR6610
1015760	H104R60	49,91	1.965	31,88	1.255	12,00	.472	54,86	2.160	59,87	2.357	250,00	9.843	63,50	2.500	3,00	.118	3,00	.118	KRR6610
1015761	H104L55	49,91	1.965	31,88	1.255	12,00	.472	54,86	2.160	54,86	2.160	250,00	9.843	63,50	2.500	3,00	.118	3,00	.118	KRR6610
1015762	H104L60	49,91	1.965	31,88	1.255	12,00	.472	54,86	2.160	59,87	2.357	250,00	9.843	63,50	2.500	3,00	.118	3,00	.118	KRR6610



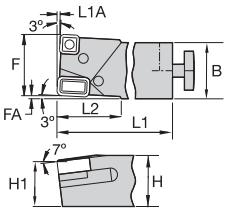
Model 106 Tread Profile Turning

		H		H1		B		F		L1		L2		FA		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
3385769	H106R55	49,91	1.965	43,87	1.727	54,86	2.160	54,86	2.160	225,00	8.858	63,50	2.500	3,00	.118	KRR6610
1015763	H106R60	49,91	1.965	43,87	1.727	54,86	2.160	59,87	2.357	225,00	8.858	63,50	2.500	3,00	.118	KRR6610
3385770	H106L55	49,91	1.965	43,87	1.727	54,86	2.160	54,86	2.160	225,00	8.858	63,50	2.500	3,00	.118	KRR6610
1015784	H106L60	49,91	1.965	43,87	1.727	54,86	2.160	59,87	2.357	225,00	8.858	63,50	2.500	3,00	.118	KRR6610

Spare Parts

catalog number	steel locking unit	steel locking unit	cone point set screw	optional socket set screw	optional brass slug	optional square head bolt
H106R55	SU12	SU13	S1006PKG	S749	S1033	S1014
H106R60	SU12	SU13	S1006PKG	S749	S1033	S1014
H106L60	SU12	SU13	S1006PKG	S749	S1033	S1014
H106L60	SU12	SU13	S1006PKG	S749	S1033	S1014

NOTE: Requires two inserts.
See page F84 for insert selection.



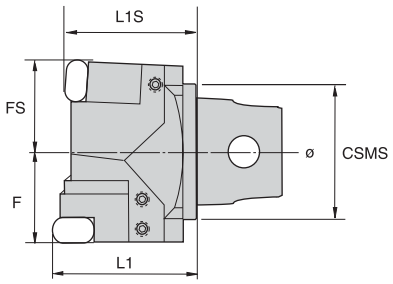
Model 106 Tread Profile Turning • Carbide Shim

		H		H1		B		F		L1		L2		FA		L1A			
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1	insert 2
1015557	H106R60H	50,00	1.969	43,87	1.727	54,86	2.160	59,87	2.357	225,00	8.858	63,50	2.500	3,00	.118	3,00	.118	KRR658671	KRR6610
1015558	H106L60H	50,00	1.969	43,87	1.727	54,86	2.160	59,87	2.357	225,00	8.858	63,50	2.500	3,00	.118	3,00	.118	KRR658671	KRR6610

Spare Parts

catalog number	steel locking unit	cone point set screw	optional socket set screw	optional brass slug	optional square head bolt
H106R60H	SU6B	S1006PKG	S751	S1033	S1014
H106L60H	SU7B	S1006PKG	S751	S1033	S1014

NOTE: Requires two inserts.
See page F84 for insert selection.





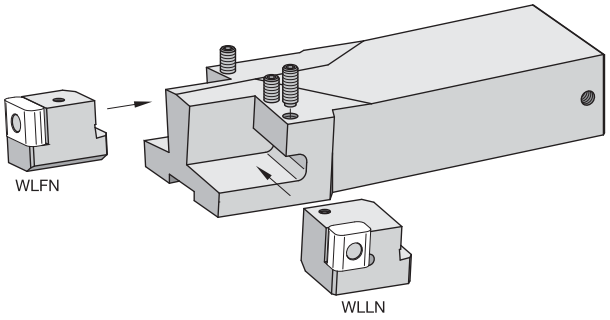
TK

order number	catalog number	CSMS system size	F mm	F in	FS mm	FS in	L1 mm	L1 in	L1S mm	L1S in
1781756	**TK01339D**	KM63	42,50	1.673	42,50	1.673	66,00	2.598	60,00	2.362
1781755	**TK01338D**	KM63	42,50	1.673	42,50	1.673	66,00	2.598	60,00	2.362

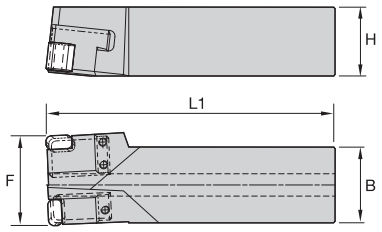
NOTE: See page F86 for insert selection.

Assembly Instructions

basic/KM shank	cartridge WLLN..	cartridge WLFN..
right	right	left
left	left	right



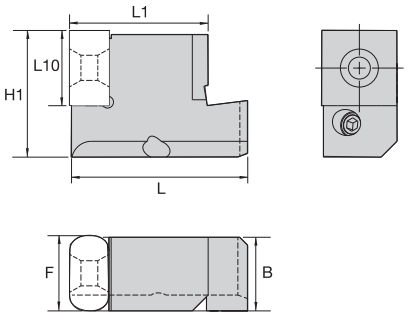
Assembly of complete tool

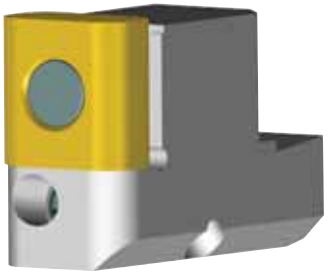


Basic Shank WXXN

order number	catalog number	H mm	H in	B mm	B in	F assembly mm	F assembly in	L1 assembly mm	L1 assembly in	clamp screw
1251262	**WXXNR4455X-FL**	50,00	1.969	55,00	2.165	65,00	2.559	210,00	8.268	**PT00163**
1251261	**WXXNL4455X-FL**	50,00	1.969	55,00	2.165	65,00	2.559	210,00	8.268	**PT00163**

NOTE: See page F86 for insert selection.





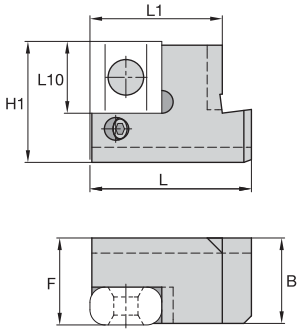
Cartridge WLFN

		H1		B		F		L10		L1		L		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	gage insert
2435187	WLFNR32CA19S	32,00	1.260	18,60	.732	19,00	.748	19,00	.748	35,00	1.378	45,00	1.772	LNUX191940...
2435188	WLFNL32CA19S	32,00	1.260	18,60	.732	19,00	.748	19,00	.748	35,00	1.378	45,00	1.772	LNUX191940...

Spare Parts

catalog number	clamp stud	clamp screw	hex wrench
WLFNR32CA19S	114.305	121.616	170.003
WLFNL32CA19S	114.305	121.616	170.003

NOTE: See page F86 for insert selection.





Cartridge WLLN

		H1		B		F		L10		L1		L		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	gage insert
2435183	WLLNR32CA19S	32,00	1.260	22,60	.890	23,00	.906	19,00	.748	35,00	1.378	45,00	1.772	LNUX191940...
2435185	WLLNR32CA30S	32,00	1.260	22,60	.890	23,00	.906	30,00	1.181	35,00	1.378	45,00	1.772	LNUX301940...
2435184	WLLNL32CA19S	32,00	1.260	22,60	.890	23,00	.906	19,00	.748	35,00	1.378	45,00	1.772	LNUX191940...
2435186	WLLNL32CA30S	32,00	1.260	22,60	.890	23,00	.906	30,00	1.181	35,00	1.378	45,00	1.772	LNUX301940...

Spare Parts

catalog number	clamp stud	clamp screw	hex wrench
WLLNR32CA19S	114.305	121.616	170.003
WLLNR32CA30S	114.305	121.616	170.003
WLLNL32CA19S	114.305	121.616	170.003
WLLNL32CA30S	114.305	121.616	170.003

NOTE: See page F86 for insert selection.

Kennametal stocks a complete line of standard inserts for wheel and axle machining. Inserts are available in various styles, sizes, and grades.

- **Wheel boring** — molded chipbreaker inserts in round, square, octagon, and regrindable inserts.
- **Axle turning** — triangle- and diamond-shaped inserts with chipbreakers.
- **Wheel turning** — rectangular and square styles, with or without molded chipbreakers.
- **Wheel truing** — round buttons with center hole for locking.


LNUX-RRH


WTS10P


LNUX-RRP


LNUX-RRSM


KRR6586-65


KRR6586-71

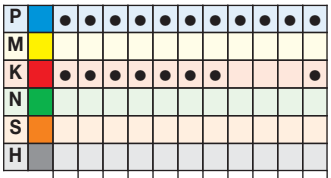

KRR6586-75

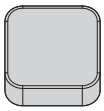

KRR6586-52


KRR6586-50

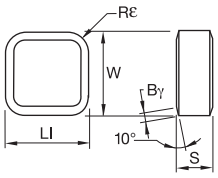
Application Specific

● first choice
○ alternate choice

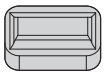




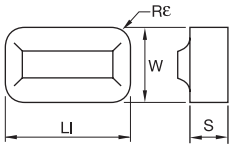
KRR-K



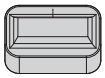
ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR16K	KRR16K	25,40	1.000	25,40	1.000	9,53	3/8	4,76	3/16	—	—	0,76	.030										●	



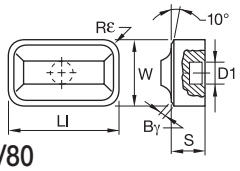
KRR-6566



ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR6566	KRR6566	19,05	.750	31,75	1.250	9,53	3/8	4,76	3/16	—	—	—	—	●									●	



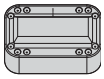
KRR-6586-50/80

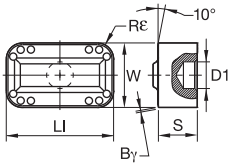


ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR658650	KRR658650	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020	●				●						
KRR658680	KRR658680	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020						●		●			

● first choice
○ alternate choice

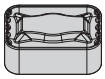
P		●	●	●	●	●	●	●	●	●	●	●												
M																								
K		●	●	●	●	●	●	●				●												
N																								
S																								
H																								

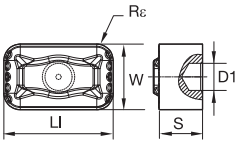




KRR-6586-52

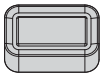
ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR658652	KRR658652	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020							●	●	●	●	

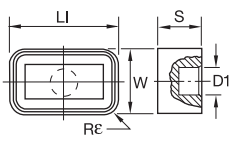




KRR-6586-65

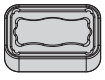
ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR658665	KRR658665	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	—	—										●	

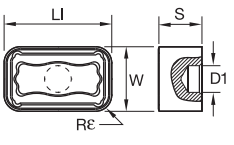




KRR-6586-71

ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR658671	KRR658671	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	—	—	●					●					





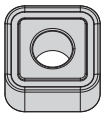
KRR-6586-75

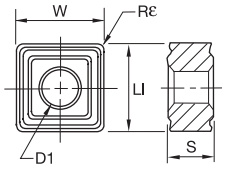
ISO catalog number	ANSI catalog number	W mm	W in	Ll mm	Ll in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
KRR4210R	KRR4210R	12,70	.500	12,70	.500	3,18	1/8	—	—	—	—	—	—			●								
KRR6566	KRR6566	19,05	.750	31,75	1.250	9,53	3/8	4,76	3/16	—	—	—	—	●									●	
KRR658650	KRR658650	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020	●				●						
KRR658652	KRR658652	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020							●	●	●	●	
KRR658665	KRR658665	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	—	—										●	
KRR658671	KRR658671	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	—	—	●					●					
KRR658680	KRR658680	19,05	.750	31,75	1.250	12,70	1/2	4,76	3/16	7,87	.310	0,51	.020						●		●			
KRR6610	KRR6610	19,05	.750	19,05	.750	9,53	3/8	4,00	5/32	7,87	.310	—	—	●									●	
KRR86650	KRR86650	25,40	1.000	25,40	1.000	9,53	3/8	4,76	3/16	7,87	.310	0,51	.020	●										

● first choice
○ alternate choice

	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P	●	●	●	●	●	●	●	●	●	●	●
M											
K	●	●	●	●	●	●	●				●
N											
S											
H											

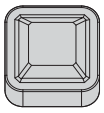
KRR-6610

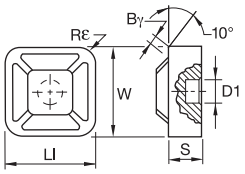




ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in
KRR6610	KRR6610	19,05	.750	19,05	.750	9,53	3/8	4,00	5/32	7,87	.310	—	—

KRR-866-50

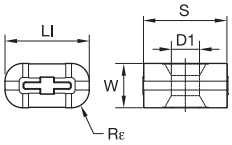




ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in
KRR86650	KRR86650	25,40	1.000	25,40	1.000	9,53	3/8	4,76	3/16	7,87	.310	0,51	.020

LNUX-RRF



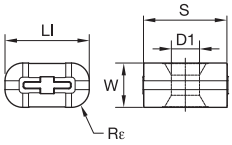


ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in
LNUX191940RRF	LNUX191940RRF	10,00	.394	19,00	.748	19,05	3/4	4,00	5/32	6,35	.250	—	—
LNUX301940RRF	LNUX301940RRF	12,00	.472	30,00	1.181	19,05	3/4	4,00	5/32	6,35	.250	—	—

NOTE: Also available in KC9105.

LNUX-RRH





ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in
LNUX191940RRH	LNUX191940RRH	10,00	.394	19,00	.748	19,05	3/4	4,00	5/32	6,35	.250	—	—
LNUX301940RRH	LNUX301940RRH	12,00	.472	30,00	1.181	19,05	3/4	4,00	5/32	6,35	.250	—	—

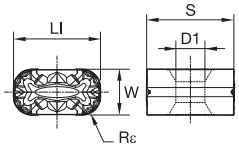
NOTE: Also available in KC9105.

Application Specific

● first choice
○ alternate choice

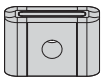
LNUX-RRP

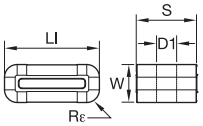




ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
LNUX191940RRP	LNUX191940RRP	10,00	.394	19,00	.748	19,05	3/4	4,00	5/32	6,35	.250	–	–		●	●	●	●						
LNUX301940RRP	LNUX301940RRP	12,00	.472	30,00	1.181	19,05	3/4	4,00	5/32	6,35	.250	–	–		●	●								

LNUX-RRSM

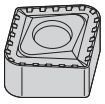


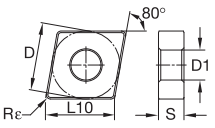


ISO catalog number	ANSI catalog number	W mm	W in	LI mm	LI in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	Bγ mm	Bγ in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
LNUX191940RRSM	LNUX191940RRSM	10,00	.394	19,00	.748	19,05	3/4	4,00	5/32	6,35	.250	–	–		●	●								
LNUX301940RRSM	LNUX301940RRSM	12,00	.472	30,00	1.181	19,05	3/4	4,00	5/32	6,35	.250	–	–		●	●								

NOTE: Also available in KC9105™.

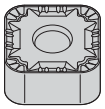
CNMM-RRP

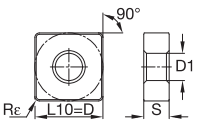




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
CNMM190740RRP	CNMM190740RRP	19,05	3/4	19,34	.762	7,94	5/16	4,00	5/32	7,93	.313		●						●			

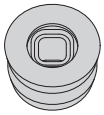
SNMX-RRP

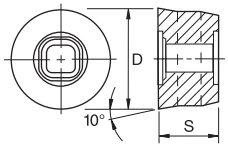




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMX190640RRP	SNMX190640RRP	19,05	3/4	19,05	.750	6,350	1/4	4,000	5/32	6,35	.250		●	●								

WTS-P





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
WTS10P	WTS10P	15,82	.623	–	–	9,525	3/8	–	–	–	–	●									●	

Application Specific



Kennametal Tools for Railways and Wheel Machining

Primary Application

Kennametal offers a complete line of tooling that incorporates the latest technology for maximum metal removal and higher productivity. All tools perform in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs. Tools in this range are for reconditioning mounted wheel sets, wheel boring, wheel truing, axle turning and journal burnishing.

Features and Benefits

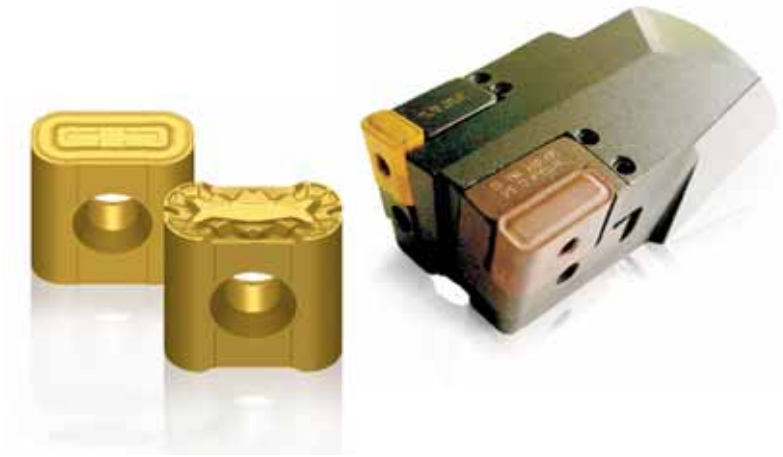
Machining conditions vary with the wheel's type of service. Reduced production time and lower maintenance costs produce superior results even under these tough conditions.

- Skid flat areas.
- Accidental torch burns.
- Overheating of spinning wheels.
- Excessive mushroom and rollovers that are hardened by unusual hump retarder pressure.
- Mismatched wheels that cause excessive wear on the side of the flange.

Each of these conditions requires a different machining speed and depth of cut.

Advantages of Wheelset Reconditioning with Kennametal Wheel Lathe Tools.

- Heavy-duty steel locking unit ensures longer life and reduces operating costs.
- No top clamp to wear out or interfere with chip flow.
- Hardened-steel locking unit locks the insert against two walls in the toolholder to prevent insert movement under heavy cutting loads.
- Quick removal of the steel locking unit.
- Fast trouble free insert indexing.
- Made from heat-treated alloy steel to withstand severe roughing cuts on work-hardened wheels.



L-Type Boring Bars

Railroad wheels are wrought steel and cast steel made in a number of designs. Steel wheels are classified as multiple-wear, two-wear, or one-wear wheels.

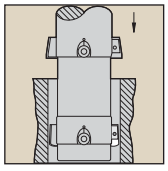
Composition and specifications of wheels include Class A, a relativity low carbon steel wheel; Class L, a lower carbon content than Class A; Class B, an intermediate carbon steel; and Class C, a relativity high-carbon steel wheel.

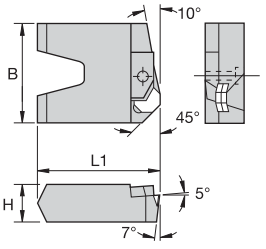


Kennametal provides L-type bar tooling to bore wheels to match journal sizes from 4 1/2" x 8" to 8" x 16".

- Tools are precision ground and hardened for maximum life.
- Lower profile permits use in L-type bars without modification.
- Fast insert indexing reduces tool changing downtime.
- Enables free cutting action at higher feed rates.
- Delivers good chip control under a wide range of conditions.
- Inserts are available in both coated and uncoated grades.
- Kennametal also provides cartridges to fit Kennametal-supplied bars to run on CNC boring machines.
- Most bars and cartridges are supplied as specials per machine manufacturers' specifications.

- Uses OPG-524 positive rake, octagonal inserts for free cutting action while finish boring.
- Tool positions the insert parallel to the bore in the operation.
- Consistently produces bore finishes to specifications.
- Inserts have eight indexable cutting edges.
- Available in 11 sizes to fit L-type boring bars.





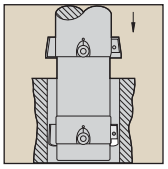


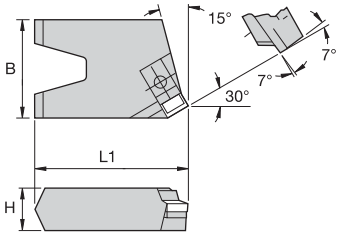
OWF-Style Tools for Roughing

order number	catalog number	min wheel bore mm	min wheel bore in	H mm	H in	B mm	B in	L1 mm	L1 in	journal size	insert 1	shim	shim screw	clamp	clamp screw
1015785	**OWF744SET**	139,70	5.500	22,23	.875	50,80	2.000	69,06	2.719	4 1/2 X 8	OPG524	**SM159**	**S125**	**CMR15**	**S472**
1015793	**OWF863SET**	200,03	7.875	25,40	1.000	57,15	2.250	99,21	3.906	6 1/2 X 12	OPG524	**SM159**	**S125**	**CMR15**	**S421**

NOTE: Tool sets contain a ground matched pair of toolholders.
See page F97 for insert selection.

- Uses SNMG-style molded chipbreaker inserts with eight cutting edges.
- Available in 11 sizes to fit L-type boring bars.
- Employs a low-profile design.
- Delivers fast insert indexing while maintaining bore size.
- Tools have a protective insert seat.





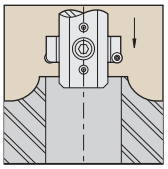


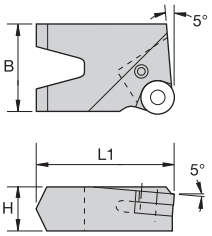
SWR-Style Tools for Roughing

order number	catalog number	min wheel bore mm	min wheel bore in	H mm	H in	B mm	B in	L1 mm	L1 in	journal size	insert 1
1015559	**SWR744SET**	234,95	9.250	22,23	.875	50,80	2.000	69,06	2.719	4 1/2 X 8	SNMG433
1015560	**SWR750SET**	158,75	6.250	22,23	.875	50,80	2.000	78,59	3.094	5 X 9	SNMG433
1015561	**SWR754SET**	171,45	6.750	22,23	.875	50,80	2.000	84,94	3.344	5 1/2 X 10	SNMG433
1015562	**SWR759SET**	187,33	7.375	22,23	.875	50,80	2.000	92,86	3.656	6 X 11	SNMG433
1015563	**SWR763SET**	200,03	7.875	22,23	.875	50,80	2.000	99,21	3.906	6 1/2 X 12	SNMG433
1015584	**SWR770SET**	222,25	8.750	22,23	.875	50,80	2.000	107,16	4.219	7 X 14	SNMG433
1015585	**SWR854SET**	171,45	6.750	25,40	1.000	57,15	2.250	84,94	3.344	5 1/2 X 10	SNMG433
1015586	**SWR859SET**	187,33	7.375	25,40	1.000	57,15	2.250	92,86	3.656	6 X 11	SNMG433
1015587	**SWR863SET**	200,03	7.875	25,40	1.000	57,15	2.250	99,21	3.906	6 1/2 X 12	SNMG433
1015588	**SWR870SET**	222,25	8.750	25,40	1.000	57,15	2.250	107,16	4.219	7 X 14	SNMG433
1015589	**SWR874SET**	234,95	9.250	25,40	1.000	57,15	2.250	116,69	4.594	8 X 16	SNMG433

NOTE: Tool sets contain a ground matched pair of toolholders.
See page F96 for insert selection.

- Available in the rugged unit locking design for operating at higher feed ranges.
- Unit locking design ensures maximum insert locking by pulling the insert down and back into the pocket.
- Locking unit protects the holder and properly seats the insert.
- Insert can be released quickly for fast indexing, minimizing downtime.
- Available in 11 sizes to fit L-type boring bars.







RUWR-Style Tools for Roughing

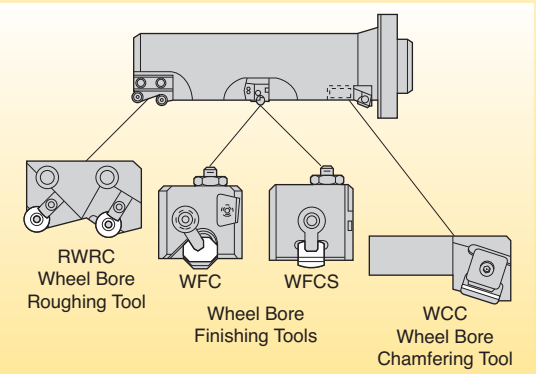
order number	catalog number	min wheel bore mm	min wheel bore in	H mm	H in	B mm	B in	L1 mm	L1 in	journal size	insert 1
1015656	**RUWR870SET**	222,25	8.750	25,40	1.000	57,15	2.250	107,16	4.219	7 X 14	RNMG64

NOTE: Tool sets contain a ground matched pair of toolholders.
See page F96 for insert selection.

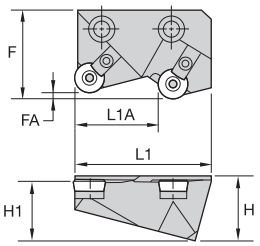
Advantages of Kennametal Wheel Boring Tools

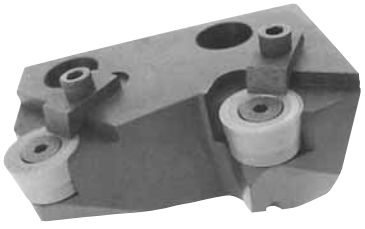
- Available in several styles for rough and finish boring.
- Tools are available for finishing KRR- or OPG-style inserts.
- Rough boring tools use RCMH round inserts.
- Tools keep the insert parallel to the bore during operation to ensure a smooth cut within established finish specifications.
- All styles of tools are designed with insert locking confined within the shank height. This enables the tools to be retracted to bore the smaller sizes without modifying the standard bar.
- Check the catalog number and dimensions of your cartridges before ordering. Bars and cartridges on older machines may not be the same. Call Kennametal's Customer Application Support team for assistance.





- Uses RCMH-style inserts for free cutting action while rough boring.
- This is a double-pocket cartridge and requires two inserts and two sets of hardware.
- Cartridges are easily replaceable.

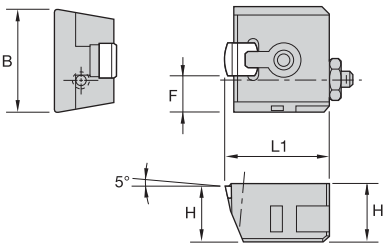




RWRC-Style Tools for Roughing

		H		H1		F		L1		FA		L1A						
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1	insert screw	shim	clamp	clamp screw
1015616	**RWRC**	41,15	1.620	38,10	1.500	57,11	2.249	85,85	3.380	4,75	.187	52,38	2.062	RCMH64	**S1001**	**SM381**	**S412**	**S412**

NOTE: See page F95 for insert selection.





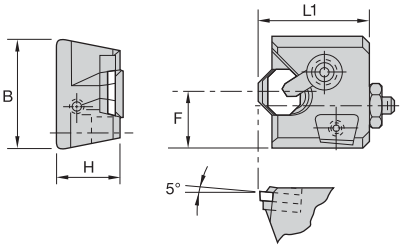
WFCS-Style Tools for Finishing

		H		B		F		L1		H1		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	insert 1
1015615	WFCS	23,88	.940	39,68	1.562	14,28	.562	41,15	1.620	22,23	.875	KRR4210R

Spare Parts

catalog number	adjusting screw	jam nut	chipbreaker	shim	shim screw	clamp	clamp screw
WFCS	S846	S936	CBS16	SRR4210R	S111	CK13	STC4

NOTE: See page F97 for insert selection.





WFC-Style Tools for Finishing

		H		B		F		L1		
order number	catalog number	mm	in	mm	in	mm	in	mm	in	insert 1
1177582	WFC	23,80	.937	39,68	1.562	20,63	.812	41,15	1.620	OPG524

Spare Parts

catalog number	adjusting screw	jam nut	chipbreaker	shim	shim screw	clamp	clamp screw
WFC	S846	S936	CBO560	SM159	S125	CK13	STC4

NOTE: See page F97 for insert selection.

Axle Turning Tools

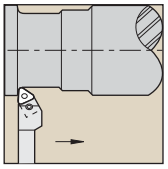
Freight car and passenger car axles are usually made of carbon steel and may be heat treated or untreated. Locomotive axles, electric transit axles, and industrial-use axles are made of a variety of carbon and alloy steels. The alloy steel axles are heat treated, while the carbon steel axles are either heat treated or untreated.

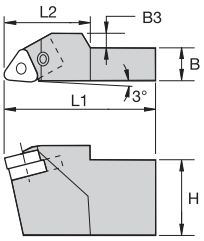
Kennametal offers two styles of holders to suit user needs for re-machining journal surfaces on car axles.

- These two standard designs use indexable inserts and have a 3° lead built into the holder to conform to the AAR standards.
- To use these tools in some dual-end-drive axle lathes, a slight modification to the existing tool block is necessary. This is required to clear the head portion of the tool to generate the required radius on the axle.
- Kennametal offers a wide variety of standard off-the-shelf tooling as well as special tooling for all types of machining applications on various machines for reconditioning axles.



- Steel locking unit design ensures maximum insert locking pressure.
- Insert locks firmly in place against the one-wall pocket for fast insert indexing.
- Locking unit protects holders and provides secure seating for the insert.
- Indexable inserts eliminate regrinding.
- Uses 1/2" IC triangular inserts that provide up to six cutting edges.







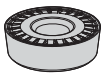
JTU-Style Tools

order number	catalog number	H mm	H in	B mm	B in	B3 mm	B3 in	L1 mm	L1 in	L2 mm	L2 in	insert 1	lock screw	steel locking unit
1015592	**JTU56R**	38,10	1.500	15,88	.625	6,35	.250	73,03	2.875	41,15	1.620	TNMP438_/KRRT438	**S1007PKG**	**SU9**
1015593	**JTU56L**	38,10	1.500	15,88	.625	6,35	.250	73,03	2.875	41,15	1.620	TNMP438_/KRRT438	**S1007PKG**	**SU9**

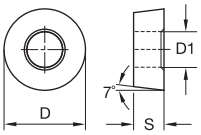
NOTE: See page F97 for insert selection.

● first choice
○ alternate choice

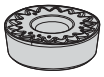
P	●	●	○	○	●	●
M				●		
K	○	○	●	○	○	○
N				○		
S				●		
H				○		



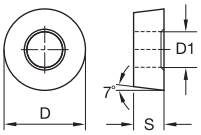
RCMH-UP



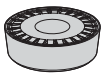
ISO catalog number	ANSI catalog number	D mm	D in	D1 mm	D1 in	S mm	S in	KCP10	KCP25	KCK20	KCU10	KC9110	KC9125
RCMH2507M0TUP	RCMH2507M0TUP	25	.984	7,55	.297	7,94	.313	●	●	●		●	●
RCMH3209M0TUP	RCMH3209M0TUP	32	1.260	10,35	.407	9,53	.375	●	●	●		●	●



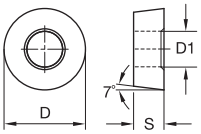
RCMH-RU



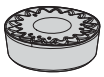
ISO catalog number	ANSI catalog number	D mm	D in	D1 mm	D1 in	S mm	S in						
RCMH2507M0RU	RCMH2507M0RU	25	.984	7,55	.297	7,94	.313	●	●	●		●	●
RCMH3209M0RU	RCMH3209M0RU	32	1.260	10,35	.407	9,53	.375	●	●	●	●	●	●



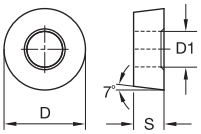
RCMX-UP



ISO catalog number	ANSI catalog number	D mm	D in	D1 mm	D1 in	S mm	S in						
RCMX2507M0TUP	RCMX2507M0TUP	25	.984	7,19	.283	7,94	.313	●	●	●		●	●
RCMX3209M0TUP	RCMX3209M0TUP	32	1.260	9,78	.385	9,53	.375	●	●	●		●	●



RCMX-RU

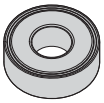


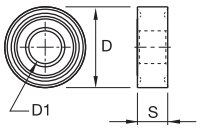
ISO catalog number	ANSI catalog number	D mm	D in	D1 mm	D1 in	S mm	S in						
RCMX2507M0RU	RCMX2507M0RU	25	.984	7,19	.283	7,94	.313	●	●	●		●	●
RCMX3209M0RU	RCMX3209M0RU	32	1.260	9,78	.385	9,53	.375	●		●	●	●	●

Application Specific

● first choice
○ alternate choice

P		●	●	●	●	●	●	●	●	●	●	●												
M																								
K		●	●	●	●	●	●	●			●													
N																								
S																								
H																								

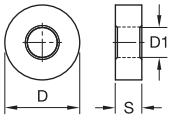




RNMG

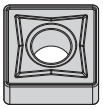
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
RNMG4009M0	RNMG4009M0	40,00	1.57	–	–	9,52	3/8	–	–	12,70	.500		●									
RNMG190600	RNMG64	19,05	3/4	–	–	6,35	1/4	–	–	7,93	.313					●			●			

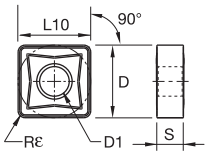




RNMG-RN

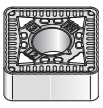
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
RNMG090300RN	RNMG32RN	9,53	3/8	–	–	3,18	1/8	–	–	3,81	.150			●	●	●						
RNMG120400RN	RNMG43RN	12,70	1/2	–	–	4,76	3/16	–	–	5,16	.203		●	●	●	●						
RNMG150600RN	RNMG54RN	15,88	5/8	–	–	6,35	1/4	–	–	6,35	.250			●	●	●						
RNMG190600RN	RNMG64RN	19,05	3/4	–	–	6,35	1/4	–	–	7,93	.313		●	●	●	●						
RNMG190900RN	RNMG66RN	19,05	3/4	–	–	9,52	3/8	–	–	7,93	.313			●								
RNMG250900RN	RNMG86RN	25,40	1	–	–	9,53	3/8	–	–	9,12	.359			●	●	●						

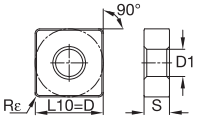




SNMG

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMG120412	SNMG433	12,70	1/2	12,70	.500	4,76	3/16	1,20	3/64	5,16	.203		●						●			
SNMG190612	SNMG643	19,05	3/4	19,05	.750	6,35	1/4	1,20	3/64	7,93	.312					●						
SNMG190616	SNMG644	19,05	3/4	19,05	.750	6,35	1/4	1,60	1/16	7,93	.313					●						
SNMG250924	SNMG866	25,40	1	25,40	1.000	9,53	3/8	2,40	3/32	9,12	.359					●						





SNMG-RN

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMG090412RN	SNMG333RN	9,53	3/8	9,53	.375	4,76	3/16	1,20	3/64	3,81	.150		●		●							
SNMG120408RN	SNMG432RN	12,70	1/2	12,70	.500	4,76	3/16	0,80	1/32	5,16	.203		●	●	●	●						
SNMG120412RN	SNMG433RN	12,70	1/2	12,70	.500	4,76	3/16	1,20	3/64	5,16	.203		●	●	●	●						
SNMG120416RN	SNMG434RN	12,70	1/2	12,70	.500	4,76	3/16	1,60	1/16	5,16	.203		●	●	●	●						
SNMG150608RN	SNMG542RN	15,88	5/8	15,88	.625	6,35	1/4	0,80	1/32	6,35	.250		●		●	●						
SNMG150612RN	SNMG543RN	15,88	5/8	15,88	.625	6,35	1/4	1,20	3/64	6,35	.250		●	●	●	●						
SNMG150616RN	SNMG544RN	15,88	5/8	15,88	.625	6,35	1/4	1,60	1/16	6,35	.250			●	●	●						
SNMG190608RN	SNMG642RN	19,05	3/4	19,05	.750	6,35	1/4	0,80	1/32	7,93	.313		●	●		●						
SNMG190612RN	SNMG643RN	19,05	3/4	19,05	.750	6,35	1/4	1,20	3/64	7,93	.313		●	●	●	●						
SNMG190616RN	SNMG644RN	19,05	3/4	19,05	.750	6,35	1/4	1,60	1/16	7,93	.313		●	●	●	●						
SNMG190624RN	SNMG646RN	19,05	3/4	19,05	.750	6,35	1/4	2,40	3/32	7,93	.313		●	●		●						

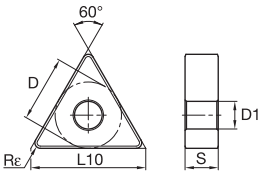
Application Specific

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

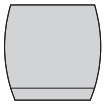
TNMG-RP

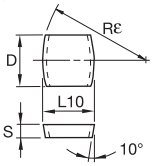




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
TNMG160408RP	TNMG332RP	9,53	3/8	16,50	.650	4,76	3/16	0,79	1/32	3,81	.150
TNMG160412RP	TNMG333RP	9,53	3/8	16,50	.650	4,76	3/16	1,20	3/64	3,81	.150
TNMG160416RP	TNMG334RP	9,53	3/8	16,50	.650	4,76	3/16	1,60	1/16	3,81	.150
TNMG220408RP	TNMG432RP	12,70	1/2	22,00	.866	4,76	3/16	0,79	1/32	5,16	.203
TNMG220412RP	TNMG433RP	12,70	1/2	22,00	.866	4,76	3/16	1,19	3/64	5,16	.203
TNMG220416RP	TNMG434RP	12,70	1/2	22,00	.866	4,76	3/16	1,59	1/16	5,16	.203
TNMG220432RP	TNMG438RP	12,70	1/2	22,00	.866	4,76	3/16	3,18	1/8	5,16	.203
TNMG270612RP	TNMG543RP	15,88	5/8	27,50	1.083	6,35	1/4	1,19	3/64	6,35	.250
TNMG270616RP	TNMG544RP	15,88	5/8	27,50	1.083	6,35	1/4	1,60	1/16	6,35	.250
TNMG330924RP	TNMG666RP	19,05	3/4	33,00	1.299	9,53	3/8	2,38	3/32	7,92	.312

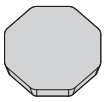
KRR4210R

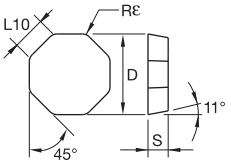




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
KRR4210R	KRR4210R	12,70	1/2	12,70	.500	3,18	1/8	–	–	–	–

OPG





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
OPGN060316	OPG524	15,88	5/8	6,58	.259	3,18	1/8	1,60	1/16	–	–

Application Specific



New Railroad Wheel Manufacturing Tooling

Features and Benefits

Wheel Production

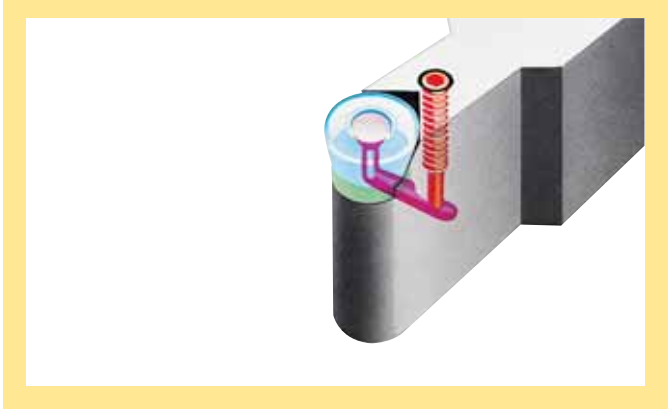
In wheel production, the forged blanks are mainly machined using RC.. inserts.

For this, Kennametal offers a comprehensive range of high-performance indexable inserts. Proprietary coatings combined with application-specific chipbreakers make these inserts well suited for new wheel production.

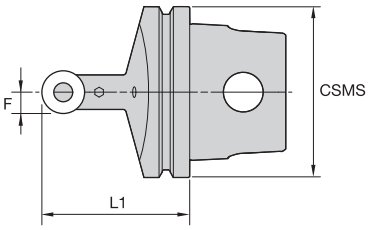
Together with the KM™ quick change tooling system, high stability, repeatability, and process security are ensured.

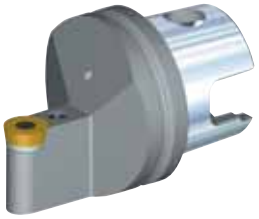
Clamping System

Our Fix-Perfect™ clamping system will provide optimum security during the most arduous machining process. With just a few revolutions of the clamping screw, the complete insert set (insert, shim, and clamping stud) can be changed.





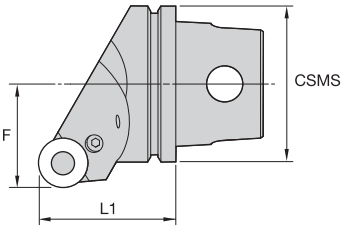




KM-PRDCN

order number	catalog number	CSMS system size	F mm	F in	L1 mm	L1 in	insert 1	shim	clamp stud	set screw
3662606	**KM80TSPRDCN20**	KM80TS	10,00	.394	70,00	2.756	RCMT2006M0	**169.333**	**119.073**	**121.820**
3662607	**KM80TSPRDCN25**	KM80TS	12,50	.492	70,00	2.756	RCMX2507M0RP	**169.337**	**118.404**	**121.820**

NOTE: Engineered solutions available.
KM100 units are made to order.
KM80 units require torque wrench TWH60R, which must be purchased separately.
See page F107 for insert selection.

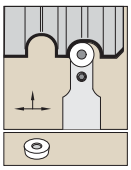


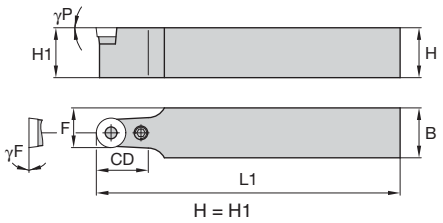


KM-PRGC

order number	catalog number	CSMS system size	F mm	F in	L1 mm	L1 in	insert 1	shim	clamp stud	set screw
1238702	**KM80PRGCL32**	KM80	53,00	2.087	80,00	3.150	RC..3209M0	**169.339**	**118.604**	**121.030**
1238697	**KM80PRGCR20**	KM80	53,00	2.087	70,00	2.756	RC..2006M0	**169.333**	**119.073**	**121.820**

NOTE: Engineered solutions available.
KM100 units are made to order.
KM80 units require torque wrench TWH60R, which must be purchased separately.
See page F107 for insert selection.





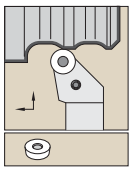
PRCC

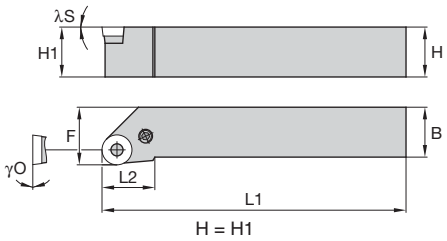
		H		B		F		L1		CD				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	γF°	γP°	insert 1
1244761	PRCCN2020K08H1	20,00	.787	20,00	.787	14,00	.551	125,00	4.921	16,00	.630	0.0	0.0	RC..0803M0
1244762	PRCCN2020K10H1	20,00	.787	20,00	.787	15,00	.591	125,00	4.921	24,00	.945	0.0	0.0	RC..1003M0
1244826	PRCCN2525M08H1	25,00	.984	25,00	.984	16,50	.650	150,00	5.906	16,00	.630	0.0	0.0	RC..0803M0
1244827	PRCCN2525M10H1	25,00	.984	25,00	.984	17,50	.689	150,00	5.906	24,00	.945	0.0	0.0	RC..1003M0
1244828	PRCCN2525M12H1	25,00	.984	25,00	.984	18,50	.728	150,00	5.906	24,00	.945	0.0	0.0	RC..1204M0
5002098	PRCCN2020M0H1	31,75	1.250	31,75	1.250	25,62	1.009	152,40	6.000	31,80	1.250	0.0	0.0	RCMT2006M0
1192388	PRCCN3225P16H1	32,00	1.260	25,00	.984	20,50	.807	170,00	6.693	33,00	1.299	0.0	0.0	RC..1606M0
1192389	PRCCN3232P20H1	32,00	1.260	32,00	1.260	26,00	1.024	170,00	6.693	32,00	1.260	0.0	0.0	RC..2006M0
5002099	PRCCN2425M0H1	38,10	1.500	38,10	1.500	31,30	1.232	177,80	7.000	38,10	1.500	0.0	0.0	RCMX2507M0-RP
1228888	PRCCN4040S25H1	40,00	1.575	40,00	1.575	32,50	1.280	250,00	9.843	78,00	3.071	0.0	0.0	RC..2507M0

Spare Parts

catalog number	shim	clamp stud	clamp screw	hex wrench
PRCCN2020K08H1	–	119.069	–	170.001
PRCCN2020K10H1	169.325	119.069	–	170.001
PRCCN2525M08H1	–	119.069	–	170.001
PRCCN2525M10H1	169.325	119.069	–	170.001
PRCCN2525M12H1	169.322	119.071	–	170.002
PRCCN2020M0H1	169.333	119.073	121.820	–
PRCCN3225P16H1	169.327	410.081	–	170.003
PRCCN3232P20H1	169.333	119.073	121.820	170.004
PRCCN2425M0H1	169.337	118.404	121.820	–
PRCCN4040S25H1	169.337	118.404	121.820	170.004

NOTE: Engineered solutions available.
See page F107 for insert selection.





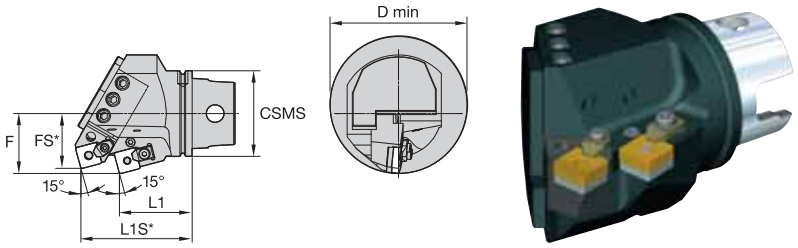
PRGC

		H		B		F		L1		L2				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	λS°	γO°	insert 1
1244829	PRGCL4040S25H1	40,00	1.575	40,00	1.575	50,00	1.969	250,00	9.843	47,00	1.850	0.0	0.0	RC..2507M0
1192390	PRGCL6050U32H1	60,00	2.362	50,00	1.969	60,00	2.362	350,00	13.780	75,00	2.953	0.0	0.0	RC..3209M0
1192391	PRGCR6050U32H1	60,00	2.362	50,00	1.969	60,00	2.362	350,00	13.780	75,00	2.953	0.0	0.0	RC..3209M0
1197549	PRGCR4040S25H1	40,00	1.575	40,00	1.575	50,00	1.969	250,00	9.843	47,00	1.850	0.0	0.0	RC..2507M0

Spare Parts

catalog number	shim	clamp stud	clamp screw	hex wrench
PRGCL4040S25H1	169.337	118.404	121.820	170.004
PRGCL6050U32H1	169.339	118.604	121.030	170.005
PRGCR6050U32H1	169.339	118.604	121.030	170.005
PRGCR4040S25H1	169.337	118.404	121.820	170.004

NOTE: See page F107 for insert selection.



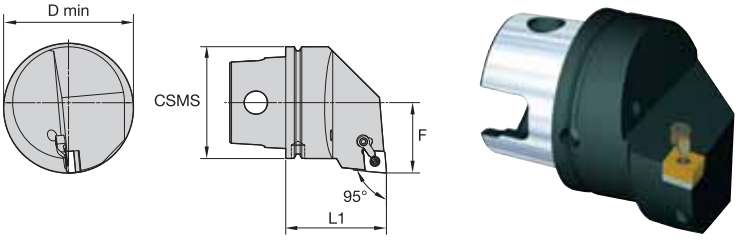
KM-PSDN 95° with Adjustable Cartridge

order number	catalog number	CSMS system size	F mm	F in	FS mm	FS in	L1 mm	L1 in	L1S mm	L1S in	D min mm	D min in	insert 1
1152381	**KM100-TK00055D**	KM100	70,00	2.756	64,00	2.520	85,00	3.347	130,00	5.118	160,00	6.299	SN..250724/SN..856

Cartridge • PSDN 95°

order number	catalog number	CSMS system size	F mm	F in	L1 mm	L1 in	gage insert
1178625	**PSDNN3240X25-01**	—	21,00	.827	120,00	4.724	SN..250724/SN..856

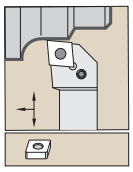
NOTE: Adjustable top cartridge.
Made to order.
See page F107 for insert selection.

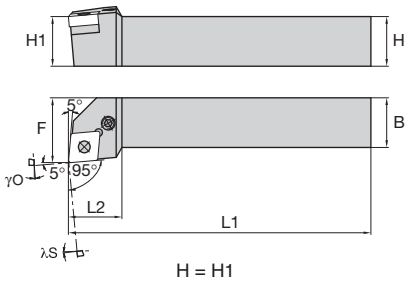


KM • MCLN 95°

order number	catalog number	CSMS system size	D min mm	D min in	F mm	F in	L1 mm	L1 in	insert 1
1151977	**KM100-TK00344D**	KM100	116,00	4.567	63,00	2.480	90,00	3.543	CN..190612/CN..643

NOTE: Made to order.
See page F107 for insert selection.





H = H1

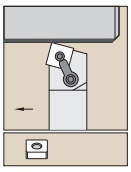
PCLN 95°

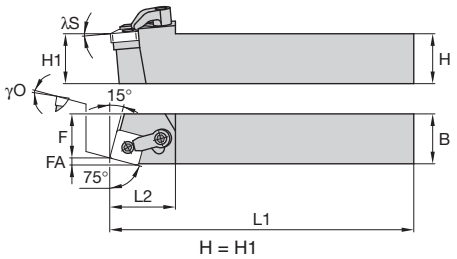
order number	catalog number	H mm	H in	B mm	B in	F mm	F in	L1 mm	L1 in	L2 mm	L2 in	λS°	γO°	insert 1
	right hand													
1192379	**PCLNR4040S19**	40,00	1.575	40,00	1.575	50,00	1.969	250,00	9.843	36,00	1.417	-6.000	-6.000	CN..190612
	left hand													
1192377	**PCLNL4040S19**	40,00	1.575	40,00	1.575	50,00	1.969	250,00	9.843	36,00	1.417	-6.000	-6.000	CN..190612

Spare Parts

catalog number	shim	shim pin	toggle lever	clamp screw	punch
right hand					
PCLNR4040S19	**512.123**	**513.033**	**511.033**	**514.133**	**515.022**
left hand					
PCLNL4040S19	**512.123**	**513.033**	**511.033**	**514.133**	**515.022**

NOTE: Engineered solutions available.
See page F107 for insert selection.





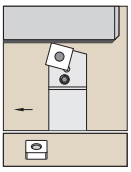
MSBN 75°

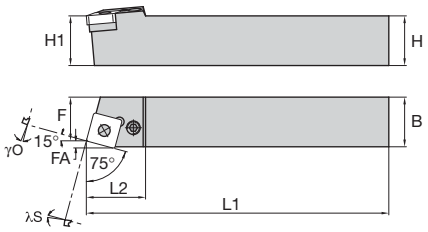
		H		B		F		L1		L2		FA				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	λS°	γO°	insert 1
1101954	MSBNR4040R19	40,00	1.575	40,00	1.575	35,00	1.378	200,00	7.874	40,00	1.575	4,60	.181	-5.000	-5.000	SN..190612
1099148	MSBNL4040R19	40,00	1.575	40,00	1.575	35,00	1.378	200,00	7.874	40,00	1.575	4,60	.181	-5.000	-5.000	SN..190612

Spare Parts

catalog number	shim	lock pin	clamp	clamp screw
MSBNR4040R19	ISSN633	KLM68	CKM12	STCM4
MSBNL4040R19	ISSN633	KLM68	CKM12	STCM4

NOTE: Engineered solutions available.
See page F108 for insert selection.





H = H1

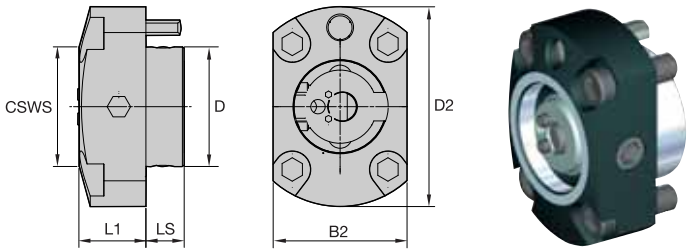
PSBN 75°

		H		B		F		L1		L2		FA				
order number	catalog number	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	λS°	γO°	insert 1
1244682	PSBNR4040S19	40,00	1.575	40,00	1.575	35,00	1.378	250,00	9.843	38,00	1.496	4,60	.181	-6.000	-6.000	SN..190612
1244683	PSBNR4040S25	40,00	1.575	40,00	1.575	35,00	1.378	250,00	9.843	47,00	1.850	5,90	.232	-6.000	-6.000	SN..250724
1244674	PSBNL4040S19	40,00	1.575	40,00	1.575	35,00	1.378	250,00	9.843	38,00	1.496	4,60	.181	-6.000	-6.000	SN..190612
1244675	PSBNL4040S25	40,00	1.575	40,00	1.575	35,00	1.378	250,00	9.843	47,00	1.850	5,90	.232	-6.000	-6.000	SN..250724

Spare Parts

catalog number	shim	shim pin	toggle lever	clamp screw	punch
PSBNR4040S19	512.083	513.033	511.033	514.133	515.022
PSBNR4040S25	512.092	513.038	511.038	514.138	515.028
PSBNL4040S19	512.083	513.033	511.033	514.133	515.022
PSBNL4040S25	512.092	513.038	511.038	514.138	515.028

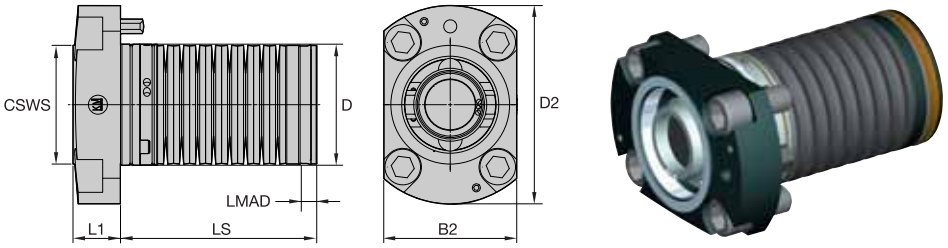
NOTE: Engineered solutions available.
See page F108 for insert selection.



KM-NCM-EF

			L1		LS		B2		D		D2			
order number	catalog number	CSWS system size	mm	in	mm	in	mm	in	mm	in	mm	in	KM spare parts package	screw
2420366	**KM100NCMEF**	KM100	56,00	2.205	32,00	1.260	112,00	4.409	100,00	3.937	167,00	6.575	–	–
1021576	**KM32NCMEF**	KM32	20,00	.787	12,00	.472	36,00	1.417	32,00	1.260	54,00	2.126	**KM32PKG3L**	–
1021642	**KM40NCMEF**	KM40	25,00	.984	15,00	.591	44,00	1.732	40,00	1.575	68,00	2.677	**KM40PKG3L**	**MS1217**
1021749	**KM50NCMEF**	KM50	30,00	1.181	20,00	.787	55,00	2.165	50,00	1.969	84,00	3.307	**KM50PKG3L**	**MS1361**
1021753	**KM63NCMEF**	KM63	40,00	1.575	20,00	.787	72,00	2.835	63,00	2.480	102,00	4.016	**KM63PKG3L**	**MS1460**
1144799	**KM80NCMEF**	KM80	50,00	1.969	25,00	.984	90,00	3.543	80,00	3.150	132,00	5.197	**KM80PKG3L**	**DWG MS1599**

NOTE: KM100 clamping units are made to order.



KM100-Spring Packs

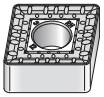
			L1		LS		LMAD travel		B2		D		D2			
order number	catalog number	CSWS system size	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	KM spare parts package	screw
1178668	**KM100-PK00001D**	KM100	40,00	1.575	165,25	6.506	13,00	.512	112,00	4.409	101,98	4.015	167,00	6.575	**KM80PKG3L**	**MS1566**

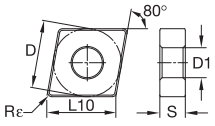
NOTE: KM100 clamping units are made to order.

● first choice
○ alternate choice

		K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
P		●	●	●	●	●	●	●	●	●	●	●
M												
K		●	●	●	●	●	●	●				●
N												
S												
H												

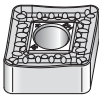
CNMM-RH

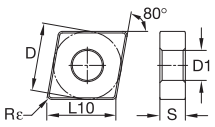




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMM190612RH	CNMM643RH	19,05	3/4	19,34	.762	6,35	1/4	1,20	3/64	7,93	.313
CNMM190616RH	CNMM644RH	19,05	3/4	19,34	.762	6,35	1/4	1,60	1/16	7,93	.313
CNMM190624RH	CNMM646RH	19,05	3/4	19,34	.762	6,35	1/4	2,40	3/32	7,93	.313
CNMM250924RH	CNMM866RH	25,40	1	25,79	1.015	9,53	3/8	2,40	3/32	9,12	.359

CNMM-RM

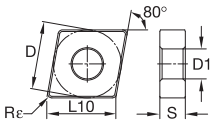




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMM120408RM	CNMM432RM	12,70	1/2	12,90	.508	4,76	3/16	0,80	1/32	5,16	.203
CNMM120412RM	CNMM433RM	12,70	1/2	12,90	.508	4,76	3/16	1,20	3/64	5,16	.203
CNMM120416RM	CNMM434RM	12,70	1/2	12,90	.508	4,76	3/16	1,60	1/16	5,16	.203
CNMM160612RM	CNMM543RM	15,88	5/8	16,12	.635	6,35	1/4	1,20	3/64	6,35	.250
CNMM160616RM	CNMM544RM	15,88	5/8	16,12	.635	6,35	1/4	1,60	1/16	6,35	.250
CNMM160624RM	CNMM546RM	15,88	5/8	16,12	.635	6,35	1/4	2,40	3/32	6,35	.250
CNMM190612RM	CNMM643RM	19,05	3/4	19,34	.762	6,35	1/4	1,20	3/64	7,93	.313
CNMM190616RM	CNMM644RM	19,05	3/4	19,34	.762	6,35	1/4	1,60	1/16	7,93	.313
CNMM190624RM	CNMM646RM	19,05	3/4	19,34	.762	6,35	1/4	2,40	3/32	7,93	.313
CNMM250924RM	CNMM866RM	25,40	1	25,79	1.015	9,53	3/8	2,40	3/32	9,12	.359

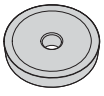
CNMM-RW

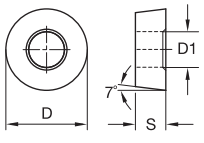




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMM190624RW	CNMM646RW	19,05	3/4	19,34	.762	6,35	1/4	2,40	3/32	7,93	.313
CNMM250924RW	CNMM866RW	25,40	1	25,79	1.015	9,53	3/8	2,40	3/32	9,12	.359

RCGX

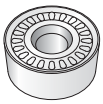


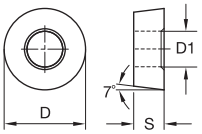


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
RCGX1003M0RP	RCGX1003M0RP	10,00	.3937	–	–	3,18	1/8	–	–	3,80	.150

● first choice
○ alternate choice

RCMX-RH

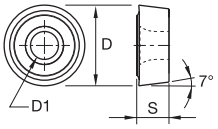




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
RCMT2006M0RH	RCMT2006M0RH	20,00	.787	–	–	6,35	1/4	–	–	6,50	.256		●	●	●	●						
RCMX2507M0RH	RCMX2507M0RH	25,00	63/64	–	–	7,94	5/16	–	–	7,55	.297		●	●	●	●						
RCMX3209M0RH	RCMX3209M0RH	32,00	1.2598	–	–	9,53	3/8	–	–	10,20	.402		●	●	●	●						

RCMT-RM

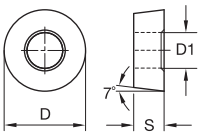




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
RCMT2006M0RM	RCMT2006M0RM	20,00	.787	–	–	6,35	1/4	–	–	6,50	.256			●		●						

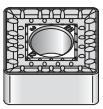
RCMX-RP

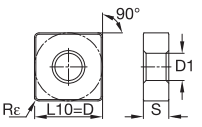




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
RCGT0602M0RP	RCGT0602M0RP	6,00	–	–	–	2,38	3/32	–	–	2,85	.112		●	●								
RCGT0803M0RP	RCGT0803M0RP	8,00	.315	–	–	3,18	1/8	–	–	3,40	.134			●		●						
RCMT1204M0RP	RCMT1204M0RP	12,00	.472	–	–	4,76	3/16	–	–	4,40	.173		●	●	●	●						●
RCMT1606M0RP	RCMT1606M0RP	16,00	.630	–	–	6,35	1/4	–	–	5,50	.217		●	●	●	●						
RCMT2006M0RP	RCMT2006M0RP	20,00	.787	–	–	6,35	1/4	–	–	6,50	.256		●	●		●						●
RCMX1003M0RP	RCMX1003M0RP	10,00	.3937	–	–	3,18	1/8	–	–	3,80	.150		●	●	●	●						
RCMX2507M0RP	RCMX2507M0RP	25,00	63/64	–	–	7,94	5/16	–	–	7,55	.297		●	●		●						
RCMX3209M0RP	RCMX3209M0RP	32,00	1.2598	–	–	9,53	3/8	–	–	10,20	.402		●	●		●						

SNMM-RH

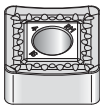


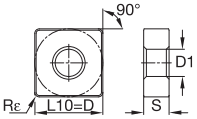


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMM190612RH	SNMM643RH	19,05	3/4	19,05	.750	6,35	1/4	1,20	3/64	7,93	.313			●	●	●						
SNMM190616RH	SNMM644RH	19,05	3/4	19,05	.750	6,35	1/4	1,60	1/16	7,93	.313		●	●	●	●						
SNMM190624RH	SNMM646RH	19,05	3/4	19,05	.750	6,35	1/4	2,40	3/32	7,93	.313		●	●	●	●						
SNMM250724RH	SNMM856RH	25,40	1	25,40	1.000	7,94	5/16	2,40	3/32	9,12	.359		●	●	●	●						
SNMM250732RH	SNMM858RH	25,40	1	25,40	1.000	7,94	5/16	3,20	1/8	9,12	.359			●								
SNMM250924RH	SNMM866RH	25,40	1	25,40	1.000	9,53	3/8	2,40	3/32	9,12	.359		●	●	●	●						

Application Specific

● first choice
○ alternate choice

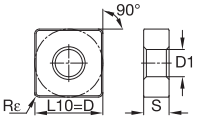




SNMM-RM

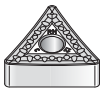
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMM120408RM	SNMM432RM	12,70	1/2	12,70	.500	4,76	3/16	0,80	1/32	5,16	.203		●	●		●						
SNMM120412RM	SNMM433RM	12,70	1/2	12,70	.500	4,76	3/16	1,20	3/64	5,16	.203		●	●		●						
SNMM120416RM	SNMM434RM	12,70	1/2	12,70	.500	4,76	3/16	1,60	1/16	5,16	.203			●		●						
SNMM150612RM	SNMM543RM	15,88	5/8	15,88	.625	6,35	1/4	1,20	3/64	6,35	.250		●	●	●	●						
SNMM150616RM	SNMM544RM	15,88	5/8	15,88	.625	6,35	1/4	1,60	1/16	6,35	.250			●	●	●						
SNMM190612RM	SNMM643RM	19,05	3/4	19,05	.750	6,35	1/4	1,20	3/64	7,93	.313			●	●	●						
SNMM190616RM	SNMM644RM	19,05	3/4	19,05	.750	6,35	1/4	1,60	1/16	7,93	.313		●	●	●	●						
SNMM190624RM	SNMM646RM	19,05	3/4	19,05	.750	6,35	1/4	2,40	3/32	7,93	.313			●		●						
SNMM250724RM	SNMM856RM	25,40	1	25,40	1.000	7,94	5/16	2,40	3/32	9,12	.359		●	●	●	●						
SNMM250924RM	SNMM866RM	25,40	1	25,40	1.000	9,53	3/8	2,40	3/32	9,12	.359		●	●	●	●						

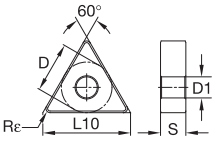




SNMM-RW

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
SNMM190624RW	SNMM646RW	19,05	3/4	19,05	.750	6,35	1/4	2,40	3/32	7,93	.313			●								
SNMM250724RW	SNMM856RW	25,40	1	25,40	1.000	7,94	5/16	2,40	3/32	9,12	.359			●								
SNMM250924RW	SNMM866RW	25,40	1	25,40	1.000	9,53	3/8	2,40	3/32	9,12	.359			●								





TNMM-RM

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K40	KC9110	KC9125	KCP10	KCP25	KC9110RR	KC9115RR	KC9125RR	KC5115RR	KC5125RR	KCK20
TNMM160408RM	TNMM332RM	9,53	3/8	16,50	.650	4,76	3/16	0,80	1/32	3,81	.150			●	●	●						
TNMM160412RM	TNMM333RM	9,53	3/8	16,50	.650	4,76	3/16	1,20	3/64	3,81	.150					●						
TNMM220408RM	TNMM432RM	12,70	1/2	22,00	.866	4,76	3/16	0,80	1/32	5,16	.203		●	●		●						
TNMM220412RM	TNMM433RM	12,70	1/2	22,00	.866	4,76	3/16	1,20	3/64	5,16	.203			●		●						
TNMM220416RM	TNMM434RM	12,70	1/2	22,00	.866	4,76	3/16	1,60	1/16	5,16	.203		●	●	●	●						
TNMM270612RM	TNMM543RM	15,88	5/8	27,50	1.083	6,35	1/4	1,20	3/64	6,35	.250			●		●						
TNMM270616RM	TNMM544RM	15,88	5/8	27,50	1.083	6,35	1/4	1,60	1/16	6,35	.250		●	●		●						



Kennametal Select • The Inserts You Want at a Price You'll Love

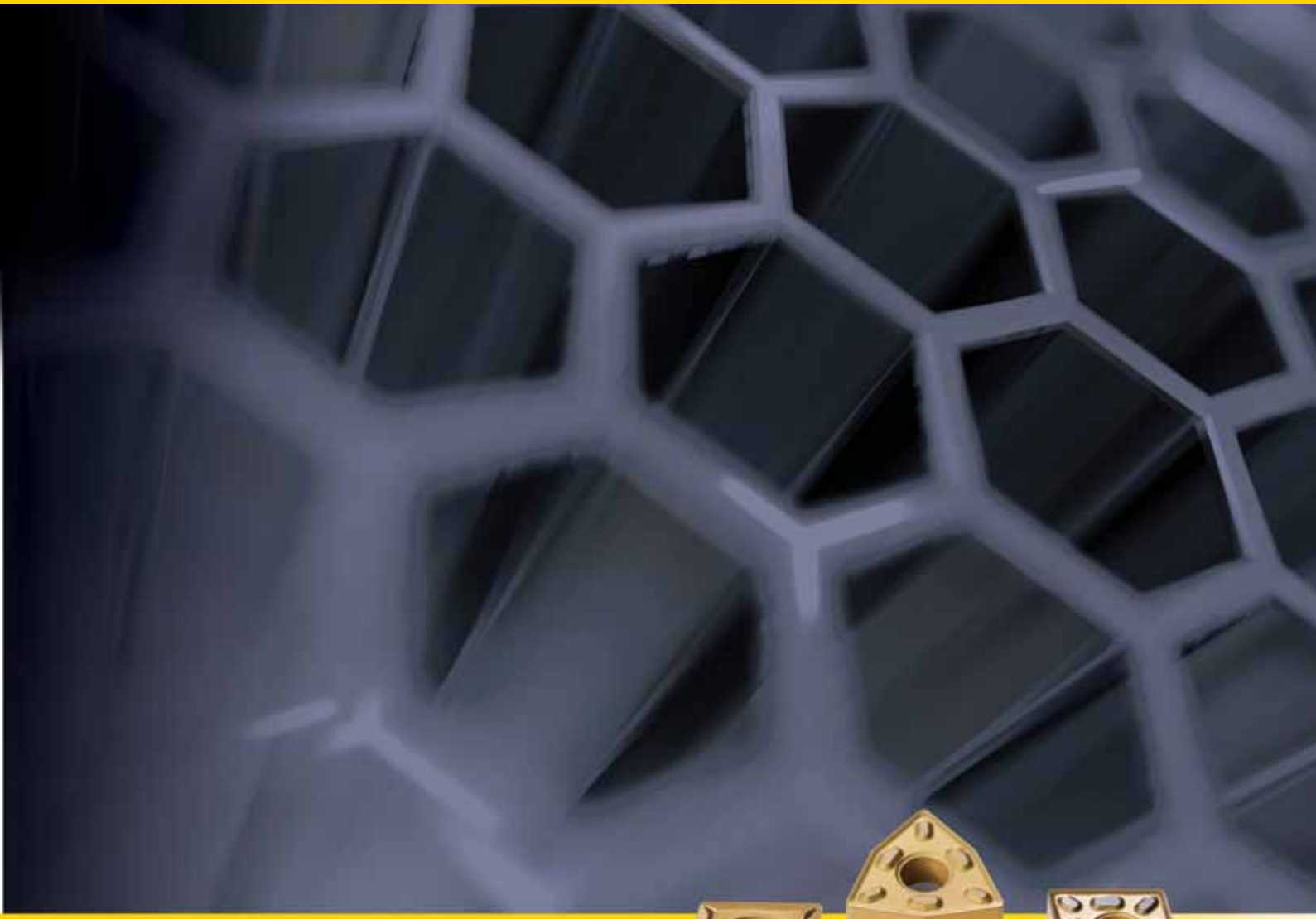
Introducing Kennametal Select inserts — the cost-effective line from the brand you already know and trust for quality. Each insert is engineered and manufactured by Kennametal to outperform competitive inserts when cutting steel, stainless steel, cast iron, and high-temperature alloys. These inserts can be used in an incredible 80% of all applications. This versatility, along with the simple grade selection method and great price, make Kennametal Select inserts perfect for small and midsize turning operations.

Features and Benefits



Getting the Most from Every Insert

Kennametal Select products make it simple to get the most out of your inserts, and your money. Every insert is gold, which exposes wear as the tool continues to be used — making it easy to detect when an insert is ready to be changed — maximizing the product's value and protecting the workpiece. Also, because Kennametal Select inserts can be used in most applications, a single insert can take on any number of tasks, thus reducing your inventory. Kennametal Select products are also reliable enough to cut steel, stainless steel, cast iron, and high-temperature alloys, enabling quick changes in workpiece materials without the need to swap inserts, saving time and money.



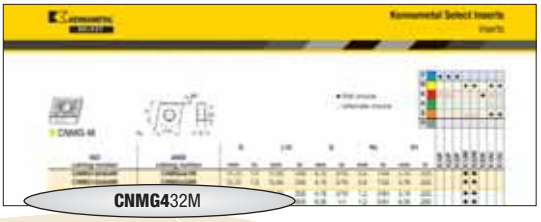


Best Way to Save

Kennametal Select inserts were developed to make it easy for small and midsize turning operations to utilize an affordable, quality product with greater durability than competitively listed products. Kennametal Select inserts ensure an overall reduction of tooling costs. Purchasing Kennametal Select inserts through one of our distributor partners or online, can save as much as 50%.

How Do Catalog Numbers Work?

Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



Application Specific

C — Insert Shape

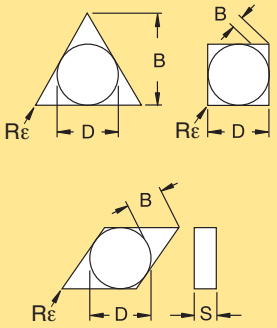
H	Hexagon 120°	
O	Octagon 135°	
P	Pentagon 108°	
R	Round —	
S	Square 90°	
T	Triangular 60°	
C D E M V	Rhomboid 80° 55° 75° 86° 35°	
W	Trigon 80° with enlarged corner angles	
L	Rectangular 90°	
A B N/K	Parallelogram 85° 82° 55°	

N — Insert Clearance Angle

A	3°	
B	5°	
C	7°	
D	15°	
E	20°	
F	25°	
G	30°	
N	0°	
P	11°	
O	Indicated for other clearance angles requiring descriptions.	

M — Tolerance Class

Tolerances apply prior to edge prep and coating



D = Theoretical diameter of the insert inscribed circle
S = Thickness
B = See figures below

G — Insert Features

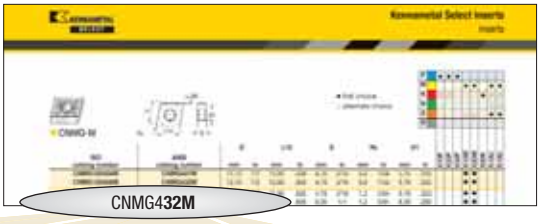
N	
R	
F	
A	
M	
G	
W	
T	
Q	
U	
B	
H	
C	
J	
X	Special Design

4 — Size

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

tolerance class	tolerance on "D"	tolerance on "B"	tolerance on "S"
C	±.0010"	±.0005"	±.001"
H	±.0005"	±.0005"	±.001"
E	±.0010"	±.0010"	±.001"
G	±.0010"	±.0010"	±.005"
M	See tables in size column		±.005"
U	See tables in size column		±.005"

By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



3
Thickness
S

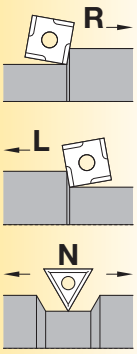
symbol inch	thickness inch
.5 (1)	1/32
.6	.040
1 (2)	1/16
1.2	5.64
1.5 (3)	3/32
2	1/8
2.5	5/32
3	3/16
3.5	7/32
4	1/4
5	5/16
6	3/8
7	7/16
18	1/2

2
Corner
Radius "Rε"

symbol inch	corner radius inch
X0	.0015
0	.004
.5	.008
1	1/64
2	1/32
3	3/64
4	1/16
5	5/64
6	3/32
7	7/64
8	1/8
–	round insert
–	

Hand of Insert *(optional)*

R = Right hand
L = Left hand
N = Neutral



Cutting Edge *(optional)*

F	Sharp
E	Rounded
T	Chamfered
S	Chamfered and Rounded
K	Double-Chamfered
P	Double-Chamfered and Rounded

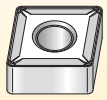
M
Chipbreaker
(optional)

GT-F	Finishing	**M**	Medium Machining
MT-F	Finishing	**R**	Medium Roughing
F	Finishing	**..MA**	Roughing
..GP	Medium Machining	**H**	Heavy Roughing

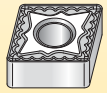
Application Specific

Step 1 • Select the insert geometry

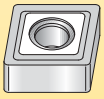
Negative Inserts



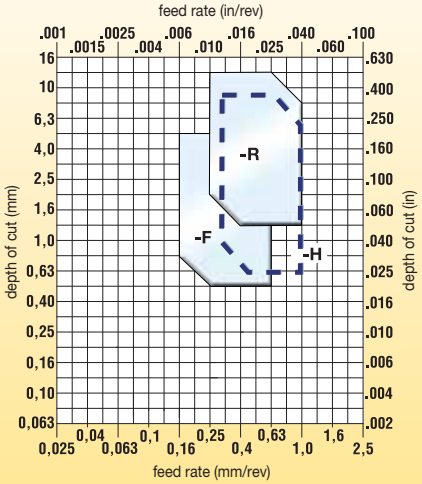
-F
Finishing



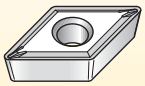
-R
Roughing



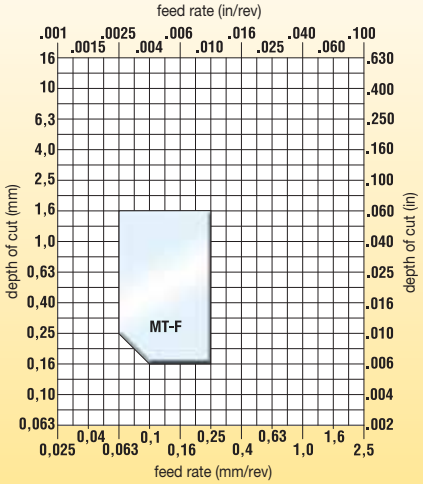
-H
Heavy Roughing



Positive Inserts



MT-F
Finishing



Step 2 • Select the grade

cutting condition		Negative Insert Geometry -F	-R	-H	Positive Insert Geometry MT-F
heavily interrupted cut		K35P	K35P	K35P	K35P
lightly interrupted cut		K25P/K35P	K25P/K35P	K25P/K35P	K25P
varying depth of cut, casting, or forging skin		K10P	K10P	K10P	K10P
smooth cut, pre-turned surface		K10P	K10P	K10P	K10P

Application Specific

Step 3 • Select the cutting speed

Low-Carbon (<0.3% C) and Free-Machining Steel — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P0/P1	K10P					◁▷					316	1056
	K25P				◁▷						248	833
	K35P		◁▷								189	630

Medium- and High-Carbon Steels (<0.3% C) — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P2	K10P			◁▷							212	704
	K25P		◁▷								176	585
	K35P	◁▷									135	450

Alloy Steels and Tool Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	135 (450)	180 (600)	225 (800)	275 (900)	320 (1050)	360 (1200)	410 (1350)	455 (1500)	495 (1650)	m/min	SFM
P3	K10P		◁▷								152	504
	K25P		◁▷								140	459
	K35P	◁▷									108	360

Alloy Steels and Tool Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	60 (200)	90 (300)	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	m/min	SFM
P4	K10P			◁▷							116	384
	K25P		◁▷								95	324
	K35P		◁▷								86	293

Ferritic, Martensitic, and PH Stainless Steels (≤330 HB) (≤35 HRC) — speed — m/min (SFM) — starting conditions

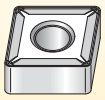
material group	grade	120 (400)	150 (500)	180 (600)	210 (700)	240 (800)	270 (900)	300 (1000)	330 (1100)	360 (1200)	m/min	SFM
P5	K10P			◁▷							172	576
	K25P			◁▷							176	585
	K35P	◁▷									122	405

Ferritic, Martensitic, and PH Stainless Steels (340–450 HB) (36–48 HRC) — speed — m/min (SFM) — starting conditions

material group	grade	105 (350)	135 (450)	165 (550)	195 (650)	225 (750)	255 (850)	285 (950)	315 (1050)	345 (1150)	m/min	SFM
P6	K10P		◁▷								144	480
	K25P		◁▷								135	450
	K35P	◁▷									95	315

Step 1 • Select the insert geometry

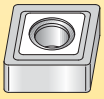
Negative Inserts



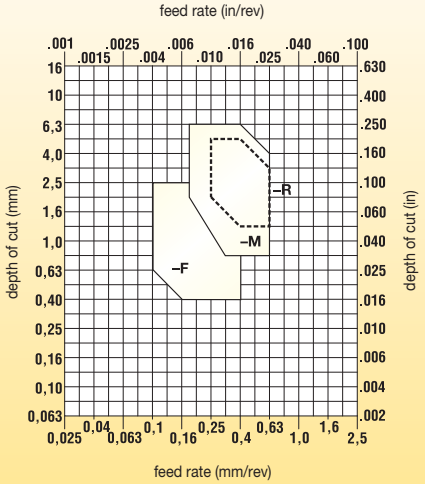
-F
Finishing



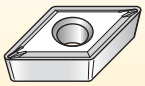
-M
Medium



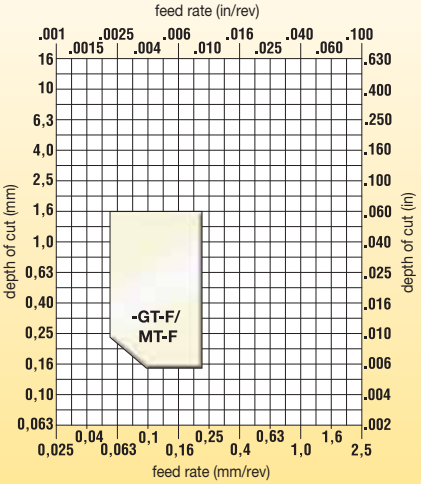
-R
Roughing



Positive Inserts



-GT-F/MT-F
Finishing



Step 2 • Select the grade

		Negative Insert Geometry			Positive Insert Geometry	
cutting condition		**-M**	**-R**	**-F**	**GT-F**	**MT-F**
heavily interrupted cut		**K25M**	**K25M**	**K10M**	**K25M**	**K25M**
lightly interrupted cut		**K25M**	**K25M**	**K10M**	**K25M**	**K25M**
varying depth of cut, casting, or forging skin		**K10M/K25M**	**K10M/K25M**	**K10M**	**K10M/K25M**	**K10M/K25M**
smooth cut, pre-turned surface		**K10M**	**K10M**	**K10M**	**K10M**	**K10M**

Step 3 • Select the cutting speed

Austenitic Stainless Steel — **speed — m/min (SFM)** — **starting conditions** ◁▷

material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M1	K10M			◁▷							162	540
	K25M		◁▷								135	450
	K10U			◁▷							194	630
	K15U		◁▷								129	420

Austenitic Stainless Steel — **speed — m/min (SFM)** — **starting conditions** ◁▷

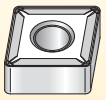
material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M2	K10M		◁▷								149	495
	K25M		◁▷								135	450
	K10U			◁▷							180	585
	K15U		◁▷								120	390

Austenitic Stainless Steel: Duplex (Ferritic and Austenitic Mixture) — **speed — m/min (SFM)** — **starting conditions** ◁▷

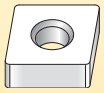
material group	grade	90 (300)	135 (450)	180 (600)	225 (800)	270 (900)	315 (1050)	360 (1200)	405 (1350)	450 (1500)	m/min	SFM
M3	K10M		◁▷								135	450
	K25M	◁▷									108	360
	K10U			◁▷							167	540
	K15U	◁▷									111	360

Step 1 • Select the insert geometry

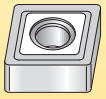
Negative Inserts



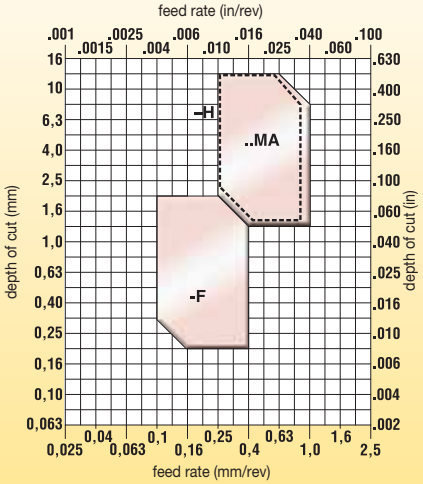
-F
Finishing



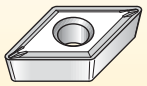
..MA
Heavy Roughing



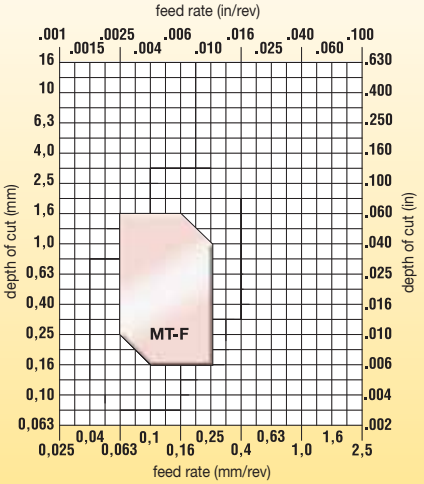
-H
Heavy Roughing



Positive Inserts



MT-F
Finishing



Step 2 • Select the grade

cutting condition	Negative Insert Geometry ..MA	-H	-F	Positive Insert Geometry MT-F
heavily interrupted cut	K20K	K20K	K20K	K20K
lightly interrupted cut	K20K	K20K	K20K	K20K
varying depth of cut, casting, or forging skin	K20K	K20K	K20K	K20K
smooth cut, pre-turned surface	K20K	K20K	K20K	K20K

Step 3 • Select the cutting speed

Gray Cast Iron — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K1	K20K			◁▷							270	900

Ductile, Compacted Graphite, and Malleable Cast Irons (<80 KSI tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

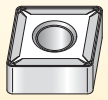
material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K2	K20K			◁▷							216	720

Ductile, Compacted Graphite, and Malleable Cast Irons (>80 KSI tensile strength) — speed — m/min (SFM) — starting conditions ◁▷

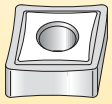
material group	grade	60 (200)	150 (500)	240 (800)	330 (1100)	420 (1400)	510 (1700)	600 (2000)	690 (2300)	780 (2600)	m/min	SFM
K3	K20K			◁▷							189	630

Step 1 • Select the insert geometry

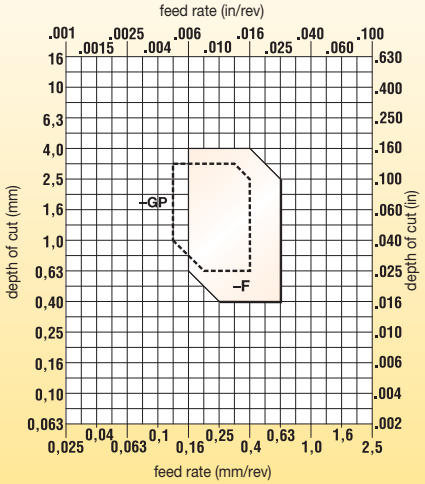
Negative Inserts



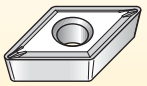
-F
Finishing



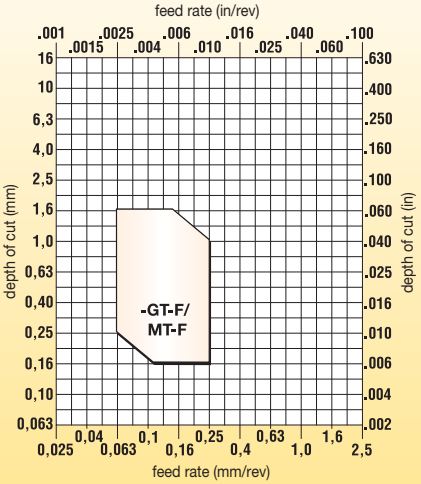
..GP
Medium



Positive Inserts



GT-F/MT-F
Finishing



Step 2 • Select the grade

		Negative Insert Geometry		Positive Insert Geometry	
cutting condition		**..GP**	**-F**	**GT-F**	**MT-F**
heavily interrupted cut		—	K15U	K15U	K15U
lightly interrupted cut		K10U	K10U	K15U	K15U
varying depth of cut, casting, or forging skin		K10U	K10U	K10U	K10U
smooth cut, pre-turned surface		K10U	K10U	K10U	K10U

Step 3 • Select the cutting speed

Iron-Based, Heat-Resistant Alloys (135–320 HB) (≤34 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S1	K10U		◁▷								50	162
	K15U		◁▷								33	108

Cobalt-Based, Heat-Resistant Alloys (150–425 HB) (≤45 HRC) — speed — m/min (SFM) — starting conditions ◁▷

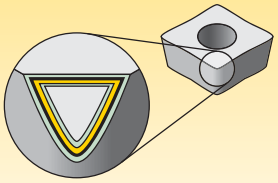
material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S2	K10U		◁▷								54	176
	K15U		◁▷								36	117

Nickel-Based, Heat-Resistant Alloys (140–475 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

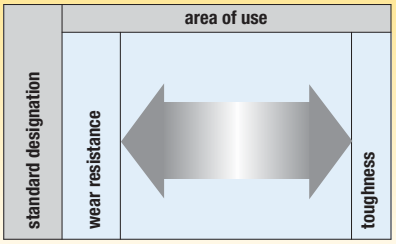
material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S3	K10U			◁▷							63	203
	K15U		◁▷								42	135

Titanium and Titanium Alloys (110–450 HB) (≤48 HRC) — speed — m/min (SFM) — starting conditions ◁▷

material group	grade	15 (50)	45 (150)	75 (250)	105 (350)	140 (450)	170 (550)	200 (650)	230 (750)	260 (850)	m/min	SFM
S4	K10U			◁▷							63	203
	K15U		◁▷								42	135



- Engineered to optimize performance.
- Gold coating on every insert.
- Proven grade technologies.



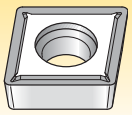
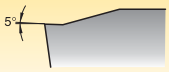
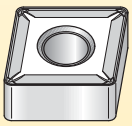
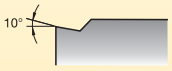
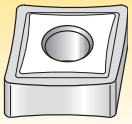
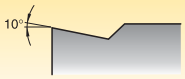
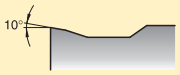
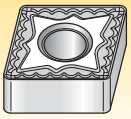
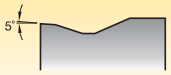
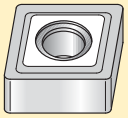
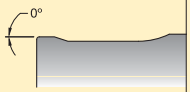
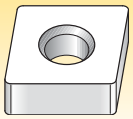
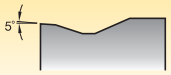
Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
K10P	C3, C7	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for light finishing to medium machining applications. Superior wear resistance.	P								
K25P	C2, C3, C6-C7	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Great general-purpose turning grade for steels. Ideal for semi-finishing to moderately heavy roughing.	P								
K35P	C5-C6	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Tough carbide grade. Ideal for roughing and heavy roughing applications	P								
K10M	M10-M20	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for finishing to medium machining of austenitic stainless steels.	P								
K25M	C1-C2	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Ideal for general-purpose machining of stainless steels.	P								
K20K	C3-C4	Coated carbide. MTCVD — TiN-TiCN-Al_2O_3-TiN. Great when used for straight or lightly interrupted cut applications of ductile and cast irons.	P								
K10U	C3-C4	Coated carbide. PVD-TiAlN-TiN. Ideal for finishing of difficult-to-machine alloys and stainless steels.	P								
K15U	C3	Uncoated carbide. Excellent abrasion resistance for machining cast irons, austenitic stainless steels, and most high-temperature alloys.	P								

Application Specific

Select the geometry — based on feed rate and depth of cut

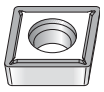
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous Materials
S	High-Temp Alloys
H	Hardened Materials

operation	insert style application	insert geometry	profile	feed rate — mm (in) / depth of cut — mm (in)
finishing	GT-F MT-F			0,15–0,4 (.006–.016) 0,5–2,3 (.020–.091)
finishing	F			0,01–0,25 (.004–.010) 0,25–1,3 (.010–.051)
medium	..GP			0,3–0,5 (.012–.020) 1,5–3,2 (.059–.126)
medium	M			0,15–0,5 (.006–.020) 0,75–5,0 (.030–.197)
roughing	R			0,2–0,6 (.008–.024) 1,1–6,4 (.043–.250)
roughing	H			0,3–0,6 (.012–.024) 1,1–6,4 (.043–.250)
roughing	..MA			0,3–0,6 (.012–.024) 1,1–6,4 (.043–.250)

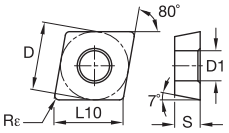
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

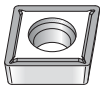


CCGT-F

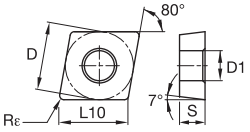


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CCGT060202F	CCGT21505F	6,35	1/4	6,45	.254	2,38	3/32	0,2	.008	2,80	.110
CCGT060204F	CCGT2151F	6,35	1/4	6,45	.254	2,38	3/32	0,4	1/64	2,80	.110
CCGT060208F	CCGT2152F	6,35	1/4	6,45	.254	2,38	3/32	0,8	1/32	2,80	.110
CCGT09T302F	CCGT32505F	9,53	3/8	9,67	.381	3,97	5/32	0,2	.008	4,40	.173
CCGT09T301F	CCGT3250F	9,53	3/8	9,67	.381	3,97	5/32	0,1	.004	4,40	.173
CCGT09T304F	CCGT3251F	9,53	3/8	9,67	.381	3,97	5/32	0,4	1/64	4,40	.173
CCGT09T308F	CCGT3252F	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CCGT060202F							●	●
CCGT060204F							●	●
CCGT060208F							●	
CCGT09T302F							●	●
CCGT09T301F							●	●
CCGT09T304F							●	●
CCGT09T308F							●	●

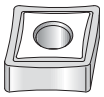


CCMT-F

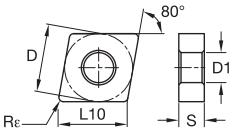


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CCMT060202F	CCMT21505F	6,35	1/4	6,45	.254	2,38	3/32	0,2	.008	2,80	.110
CCMT060204F	CCMT2151F	6,35	1/4	6,45	.254	2,38	3/32	0,4	1/64	2,80	.110
CCMT060208F	CCMT2152F	6,35	1/4	6,45	.254	2,38	3/32	0,8	1/32	2,80	.110
CCMT09T302F	CCMT32505F	9,53	3/8	9,67	.381	3,97	5/32	0,2	.008	4,40	.173
CCMT09T304F	CCMT3251F	9,53	3/8	9,67	.381	3,97	5/32	0,4	1/64	4,40	.173
CCMT09T308F	CCMT3252F	9,53	3/8	9,67	.381	3,97	5/32	0,8	1/32	4,40	.173
CCMT120404F	CCMT431F	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,50	.217
CCMT120408F	CCMT432F	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,50	.217

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CCMT120404F	●	●		●	●	●	●	
CCMT120408F	●	●		●	●	●	●	



CNGP

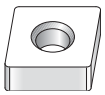


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNGP120401	CNGP430	12,70	1/2	12,90	.508	4,76	3/16	0,1	.004	5,16	.203
CNGP120402	CNGP4305	12,70	1/2	12,90	.508	4,76	3/16	0,2	.008	5,16	.203
CNGP120404	CNGP431	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNGP120408	CNGP432	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNGP120412	CNGP433	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203

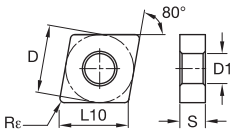
ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNGP120401							●	
CNGP120402							●	
CNGP120404							●	●
CNGP120408							●	●
CNGP120412							●	●

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

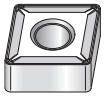


CNMA

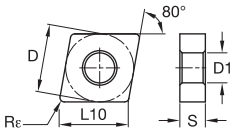


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMA120404	CNMA431	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNMA120408	CNMA432	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNMA120412	CNMA433	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203
CNMA120416	CNMA434	12,70	1/2	12,90	.508	4,76	3/16	1,6	1/16	5,16	.203
CNMA160612	CNMA543	15,88	5/8	16,12	.635	6,35	1/4	1,2	3/64	6,35	.250
CNMA160616	CNMA544	15,88	5/8	16,12	.635	6,35	1/4	1,6	1/16	6,35	.250
CNMA190612	CNMA643	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313
CNMA190616	CNMA644	19,05	3/4	19,34	.762	6,35	1/4	1,6	1/16	7,93	.313

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMA120404						●		
CNMA120408						●		
CNMA120412						●		
CNMA120416						●		
CNMA160612						●		
CNMA160616						●		
CNMA190612						●		
CNMA190616						●		

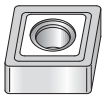


CNMG-F

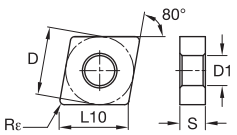


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMG120404F	CNMG431F	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNMG120408F	CNMG432F	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNMG120412F	CNMG433F	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMG120404F	●	●		●	●	●	●	●
CNMG120408F	●	●		●	●	●	●	●
CNMG120412F	●	●		●		●	●	



CNMG-H



ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMG120404H	CNMG431H	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNMG120408H	CNMG432H	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNMG120412H	CNMG433H	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203
CNMG120416H	CNMG434H	12,70	1/2	12,90	.508	4,76	3/16	1,6	1/16	5,16	.203
CNMG160612H	CNMG543H	15,88	5/8	16,12	.635	6,35	1/4	1,2	3/64	6,35	.250
CNMG160616H	CNMG544H	15,88	5/8	16,12	.635	6,35	1/4	1,6	1/16	6,35	.250
CNMG190608H	CNMG642H	19,05	3/4	19,34	.762	6,35	1/4	0,8	1/32	7,93	.313
CNMG190612H	CNMG643H	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313
CNMG190616H	CNMG644H	19,05	3/4	19,34	.762	6,35	1/4	1,6	1/16	7,93	.313
CNMG250924H	CNMG866H	25,40	1	25,79	1.015	9,53	3/8	2,4	3/32	9,12	.359

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
CNMG120404H	●	●				●		
CNMG120408H	●	●	●			●		
CNMG120412H	●	●	●			●		
CNMG120416H	●	●				●		
CNMG160612H	●	●	●			●		
CNMG160616H	●	●				●		
CNMG190608H	●					●		
CNMG190612H	●	●	●			●		
CNMG190616H	●	●	●			●		
CNMG250924H			●					

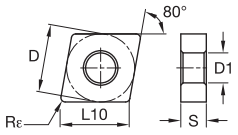
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

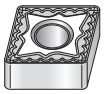
CNMG-M

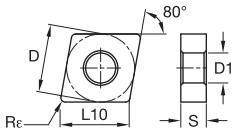




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMG120404M	CNMG431M	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNMG120408M	CNMG432M	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNMG120412M	CNMG433M	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203
CNMG160612M	CNMG543M	15,88	5/8	16,12	.635	6,35	1/4	1,2	3/64	6,35	.250
CNMG190612M	CNMG643M	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313

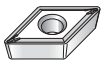
CNMG-R

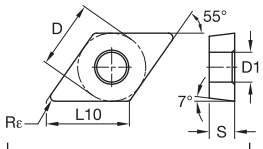




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
CNMG090308R	CNMG322R	9,53	3/8	9,67	.381	3,18	1/8	0,8	1/32	3,81	.150
CNMG120404R	CNMG431R	12,70	1/2	12,90	.508	4,76	3/16	0,4	1/64	5,16	.203
CNMG120408R	CNMG432R	12,70	1/2	12,90	.508	4,76	3/16	0,8	1/32	5,16	.203
CNMG120412R	CNMG433R	12,70	1/2	12,90	.508	4,76	3/16	1,2	3/64	5,16	.203
CNMG160612R	CNMG543R	15,88	5/8	16,12	.635	6,35	1/4	1,2	3/64	6,35	.250
CNMG190612R	CNMG643R	19,05	3/4	19,34	.762	6,35	1/4	1,2	3/64	7,93	.313

DCGT-F



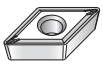


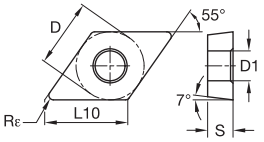
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
DCGT070201F	DCGT2150F	6,35	1/4	7,75	.305	2,38	3/32	0,1	.004	2,80	.110
DCGT11T301F	DCGT3250F	9,53	3/8	11,63	.458	3,97	5/32	0,1	.004	4,40	.173
DCGT150408F	DCGT432F	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,50	.217

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

DCMT-F

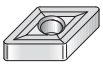


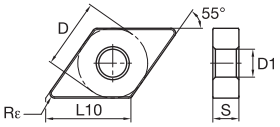


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
DCMT070202F	DCMT21505F	6,35	1/4	7,75	.305	2,38	3/32	0,2	.008	2,80	.110
DCMT070204F	DCMT2151F	6,35	1/4	7,75	.305	2,38	3/32	0,4	1/64	2,80	.110
DCMT11T302F	DCMT32505F	9,53	3/8	11,63	.458	3,97	5/32	0,2	.008	4,40	.173
DCMT11T304F	DCMT3251F	9,53	3/8	11,63	.458	3,97	5/32	0,4	1/64	4,40	.173
DCMT11T308F	DCMT3252F	9,53	3/8	11,63	.458	3,97	5/32	0,8	1/32	4,40	.173
DCMT11T312F	DCMT3253F	9,53	3/8	11,63	.458	3,97	5/32	1,2	3/64	4,40	.173
DCMT150404F	DCMT431F	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,50	.217
DCMT150408F	DCMT432F	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,50	.217

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DCMT070202F							●	●
DCMT070204F	●	●		●	●	●	●	●
DCMT11T302F							●	●
DCMT11T304F	●	●		●	●	●	●	●
DCMT11T308F	●	●		●	●	●	●	
DCMT11T312F	●			●		●	●	
DCMT150404F	●	●				●		
DCMT150408F	●	●				●		

DNGP

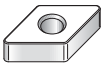


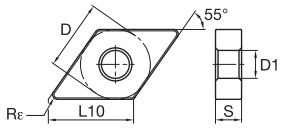


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
DNGP150401	DNGP430	12,70	1/2	15,50	.610	4,76	3/16	0,1	.004	5,16	.203
DNGP150402	DNGP4305	12,70	1/2	15,50	.610	4,76	3/16	0,2	.008	5,16	.203
DNGP150404	DNGP431	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203
DNGP150408	DNGP432	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNGP150401							●	
DNGP150402							●	●
DNGP150404							●	●
DNGP150408							●	●

DNMA





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
DNMA150408	DNMA432	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203
DNMA150412	DNMA433	12,70	1/2	15,50	.610	4,76	3/16	1,2	3/64	5,16	.203
DNMA150608	DNMA442	12,70	1/2	15,50	.610	6,35	1/4	0,8	1/32	5,16	.203
DNMA150612	DNMA443	12,70	1/2	15,50	.610	6,35	1/4	1,2	3/64	5,16	.203

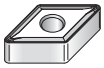
ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMA150408						●		
DNMA150412						●		
DNMA150608						●		
DNMA150612						●		

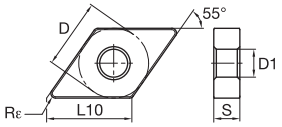
Application Specific

● first choice
○ alternate choice

P		●	●	●	○	○	○	○	○										
M					●	●		●	●										
K		○	○				●	○	○										
N								○	○										
S					○	○		●	●										
H																			

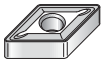
DNMG-F

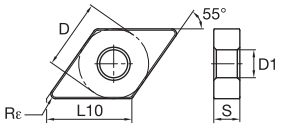




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMG150404F	DNMG431F	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	●	●		●	●	●	●	●
DNMG150408F	DNMG432F	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	●	●		●	●	●	●	●
DNMG150604F	DNMG441F	12,70	1/2	15,50	.610	6,35	1/4	0,4	1/64	5,16	.203	●	●		●		●	●	●
DNMG150608F	DNMG442F	12,70	1/2	15,50	.610	6,35	1/4	0,8	1/32	5,16	.203	●	●		●		●	●	●
DNMG150612F	DNMG443F	12,70	1/2	15,50	.610	6,35	1/4	1,2	3/64	5,16	.203	●	●		●	●	●	●	

DNMG-H

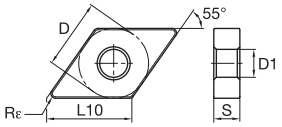




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMG150404H	DNMG431H	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203	●	●						
DNMG150408H	DNMG432H	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203	●	●	●			●		
DNMG150412H	DNMG433H	12,70	1/2	15,50	.610	4,76	3/16	1,2	3/64	5,16	.203	●	●	●			●		
DNMG150608H	DNMG442H	12,70	1/2	15,50	.610	6,35	1/4	0,8	1/32	5,16	.203	●	●	●			●		
DNMG150612H	DNMG443H	12,70	1/2	15,50	.610	6,35	1/4	1,2	3/64	5,16	.203	●	●	●			●		
DNMG190612H	DNMG543H	15,88	5/8	19,38	.763	6,35	1/4	1,2	3/64	6,35	.250		●	●					

DNMG-M



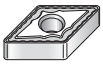


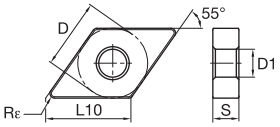
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMG150404M	DNMG431M	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203				●	●			
DNMG150408M	DNMG432M	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203				●	●			
DNMG150604M	DNMG441M	12,70	1/2	15,50	.610	6,35	1/4	0,4	1/64	5,16	.203				●	●			
DNMG150608M	DNMG442M	12,70	1/2	15,50	.610	6,35	1/4	0,8	1/32	5,16	.203				●	●			
DNMG150612M	DNMG443M	12,70	1/2	15,50	.610	6,35	1/4	1,2	3/64	5,16	.203				●	●			

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

DNMG-R



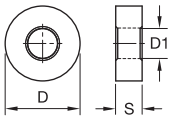


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
DNMG110408R	**DNMG332R**	9,53	3/8	11,63	.458	4,76	3/16	0,8	1/32	3,81	.150
DNMG150404R	**DNMG431R**	12,70	1/2	15,50	.610	4,76	3/16	0,4	1/64	5,16	.203
DNMG150408R	**DNMG432R**	12,70	1/2	15,50	.610	4,76	3/16	0,8	1/32	5,16	.203
DNMG150412R	**DNMG433R**	12,70	1/2	15,50	.610	4,76	3/16	1,2	3/64	5,16	.203
DNMG150604R	**DNMG441R**	12,70	1/2	15,50	.610	6,35	1/4	0,4	1/64	5,16	.203
DNMG150608R	**DNMG442R**	12,70	1/2	15,50	.610	6,35	1/4	0,8	1/32	5,16	.203
DNMG150612R	**DNMG443R**	12,70	1/2	15,50	.610	6,35	1/4	1,2	3/64	5,16	.203
DNMG190612R	**DNMG543R**	15,88	5/8	19,38	.763	6,35	1/4	1,2	3/64	6,35	.250

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
DNMG110408R	**DNMG332R**	●	●			●			
DNMG150404R	**DNMG431R**	●	●		●	●			
DNMG150408R	**DNMG432R**	●	●	●	●	●			
DNMG150412R	**DNMG433R**	●	●		●	●			
DNMG150604R	**DNMG441R**	●	●		●	●			
DNMG150608R	**DNMG442R**	●	●	●	●	●			
DNMG150612R	**DNMG443R**	●	●	●	●	●			
DNMG190612R	**DNMG543R**			●					

RNMG-H

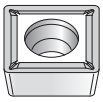


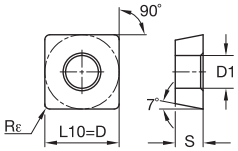


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
RNMG1204H	**RNMG43H**	12,70	1/2	–	–	4,76	3/16	–	–	5,16	.203
RNMG1906H	**RNMG64H**	19,05	3/4	–	–	6,35	1/4	–	–	7,93	.313

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
RNMG1204H	**RNMG43H**		●				●		
RNMG1906H	**RNMG64H**	●	●						

SCMT-F





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
SCMT09T304F	**SCMT3251F**	9,53	3/8	9,53	.375	3,97	5/32	0,4	1/64	4,40	.173
SCMT09T308F	**SCMT3252F**	9,53	3/8	9,53	.375	3,97	5/32	0,8	1/32	4,40	.173
SCMT120404F	**SCMT431F**	12,70	1/2	12,70	.500	4,76	3/16	0,4	1/64	5,50	.217
SCMT120408F	**SCMT432F**	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,50	.217

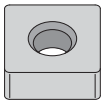
		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SCMT09T304F	**SCMT3251F**	●	●		●	●	●	●	
SCMT09T308F	**SCMT3252F**	●	●		●	●	●	●	
SCMT120404F	**SCMT431F**							●	
SCMT120408F	**SCMT432F**	●	●		●	●	●	●	

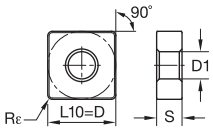
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

SNMA

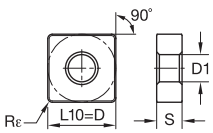




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
SNMA120408	SNMA432	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,16	.203
SNMA120412	SNMA433	12,70	1/2	12,70	.500	4,76	3/16	1,2	3/64	5,16	.203
SNMA150612	SNMA543	15,88	5/8	15,88	.625	6,35	1/4	1,2	3/64	6,35	.250
SNMA190612	SNMA643	19,05	3/4	19,05	.750	6,35	1/4	1,2	3/64	7,93	.313

SNMG-F

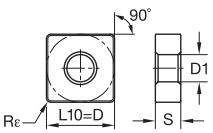




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG090308F	SNMG322F	9,53	3/8	9,53	.375	3,18	1/8	0,8	1/32	3,81	.150	●	●		●		●	●	
SNMG120408F	SNMG432F	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,16	.203	●	●		●		●	●	●

SNMG-H





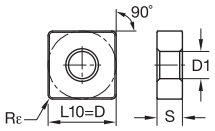
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
SNMG120408H	SNMG432H	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,16	.203	●	●				●		
SNMG120412H	SNMG433H	12,70	1/2	12,70	.500	4,76	3/16	1,2	3/64	5,16	.203	●	●	●			●		
SNMG120416H	SNMG434H	12,70	1/2	12,70	.500	4,76	3/16	1,6	1/16	5,16	.203	●	●	●			●		
SNMG150612H	SNMG543H	15,88	5/8	15,88	.625	6,35	1/4	1,2	3/64	6,35	.250		●	●			●		
SNMG150616H	SNMG544H	15,88	5/8	15,88	.625	6,35	1/4	1,6	1/16	6,35	.250		●	●			●		
SNMG190612H	SNMG643H	19,05	3/4	19,05	.750	6,35	1/4	1,2	3/64	7,93	.313		●	●			●		
SNMG190616H	SNMG644H	19,05	3/4	19,05	.750	6,35	1/4	1,6	1/16	7,93	.313		●	●			●		

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

SNMG-M

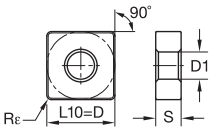




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
SNMG120408M	SNMG432M	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,16	.203
SNMG120412M	SNMG433M	12,70	1/2	12,70	.500	4,76	3/16	1,2	3/64	5,16	.203

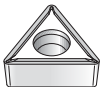
SNMG-R

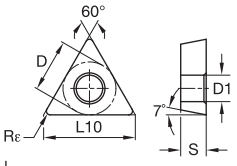




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
SNMG090308R	SNMG322R	9,53	3/8	9,53	.375	3,18	1/8	0,8	1/32	3,81	.150
SNMG120404R	SNMG431R	12,70	1/2	12,70	.500	4,76	3/16	0,4	1/64	5,16	.203
SNMG120408R	SNMG432R	12,70	1/2	12,70	.500	4,76	3/16	0,8	1/32	5,16	.203
SNMG120412R	SNMG433R	12,70	1/2	12,70	.500	4,76	3/16	1,2	3/64	5,16	.203
SNMG190612R	SNMG643R	19,05	3/4	19,05	.750	6,35	1/4	1,2	3/64	7,93	.313

TCGT-F



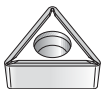


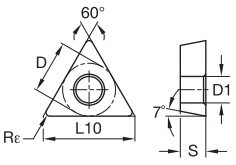
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
TCGT110201F	TCGT2150F	6,35	1/4	11,00	.433	2,38	3/32	0,1	.004	2,80	.110
TCGT110204F	TCGT2151F	6,35	1/4	11,00	.433	2,38	3/32	0,4	1/64	2,80	.110
TCGT16T302F	TCGT32505F	9,53	3/8	16,50	.650	3,97	5/32	0,2	.008	4,40	.173
TCGT16T304F	TCGT3251F	9,53	3/8	16,50	.650	3,97	5/32	0,4	1/64	4,40	.173
TCGT16T308F	TCGT3252F	9,53	3/8	16,50	.650	3,97	5/32	0,8	1/32	4,40	.173

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

TCMT-F

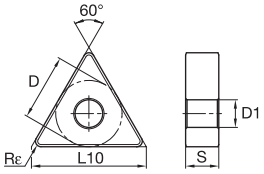




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
TCMT110202F	TCMT21505F	6,35	1/4	11,00	.433	2,38	3/32	0,2	.008	2,90	.114
TCMT110204F	TCMT2151F	6,35	1/4	11,00	.433	2,38	3/32	0,4	1/64	2,80	.110
TCMT110208F	TCMT2152F	6,35	1/4	11,00	.433	2,38	3/32	0,8	1/32	2,80	.110
TCMT16T302F	TCMT32505F	9,53	3/8	16,50	.650	3,97	5/32	0,2	.008	4,40	.173
TCMT16T304F	TCMT3251F	9,53	3/8	16,50	.650	3,97	5/32	0,4	1/64	4,40	.173
TCMT16T308F	TCMT3252F	9,53	3/8	16,50	.650	3,97	5/32	0,8	1/32	4,40	.173
TCMT16T312F	TCMT3253F	9,53	3/8	16,50	.650	3,97	5/32	1,2	3/64	4,40	.173
TCMT220408F	TCMT432F	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,50	.217

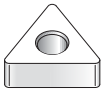
TNGP

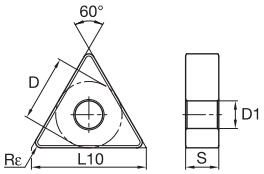




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
TNGP160402	TNGP3305	9,53	3/8	16,50	.650	4,76	3/16	0,2	.008	3,81	.150
TNGP160404	TNGP331	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150
TNGP160408	TNGP332	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150

TNMA



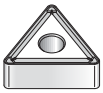


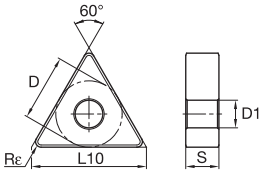
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
TNMA160408	TNMA332	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150
TNMA160412	TNMA333	9,53	3/8	16,50	.650	4,76	3/16	1,2	3/64	3,81	.150
TNMA220408	TNMA432	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203

P	●	●	●	○	○	○	○	○
M				●	●		●	●
K	○	○				●	○	○
N							○	○
S				○	○		●	●
H								

● first choice
○ alternate choice

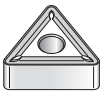
TNMG-F

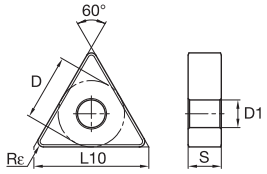




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
TNMG160404F	TNMG331F	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150	●	●		●	●	●	●	●
TNMG160408F	TNMG332F	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150	●	●		●		●	●	●
TNMG160412F	TNMG333F	9,53	3/8	16,50	.650	4,76	3/16	1,2	3/64	3,81	.150	●	●		●	●	●	●	
TNMG220408F	TNMG432F	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	●	●		●		●	●	●

TNMG-H

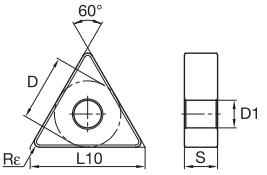




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in								
TNMG160404H	TNMG331H	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150		●						
TNMG160408H	TNMG332H	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150	●	●	●			●		
TNMG160412H	TNMG333H	9,53	3/8	16,50	.650	4,76	3/16	1,2	3/64	3,81	.150	●	●	●			●		
TNMG220404H	TNMG431H	12,70	1/2	22,00	.866	4,76	3/16	0,4	1/64	5,16	.203	●	●						
TNMG220408H	TNMG432H	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	●	●	●			●		
TNMG220412H	TNMG433H	12,70	1/2	22,00	.866	4,76	3/16	1,2	3/64	5,16	.203		●	●			●		
TNMG270612H	TNMG543H	15,88	5/8	27,50	1.083	6,35	1/4	1,2	3/64	6,35	.250	●	●	●			●		
TNMG330924H	TNMG666H	19,05	3/4	33,00	1.299	9,53	3/8	2,4	3/32	7,93	.313	●	●	●			●		

TNMG-M

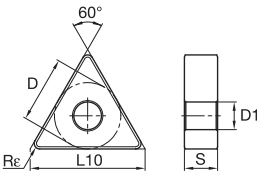




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in								
TNMG160404M	TNMG331M	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150				●	●			
TNMG160408M	TNMG332M	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150				●	●			
TNMG160412M	TNMG333M	9,53	3/8	16,50	.650	4,76	3/16	1,2	3/64	3,81	.150				●	●			
TNMG220404M	TNMG431M	12,70	1/2	22,00	.866	4,76	3/16	0,4	1/64	5,16	.203				●	●			
TNMG220408M	TNMG432M	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203				●	●			

TNMG-R





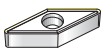
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in								
TNMG160404R	TNMG331R	9,53	3/8	16,50	.650	4,76	3/16	0,4	1/64	3,81	.150	●	●		●	●			
TNMG160408R	TNMG332R	9,53	3/8	16,50	.650	4,76	3/16	0,8	1/32	3,81	.150	●	●	●	●	●			
TNMG160412R	TNMG333R	9,53	3/8	16,50	.650	4,76	3/16	1,2	3/64	3,81	.150	●	●		●	●			
TNMG220404R	TNMG431R	12,70	1/2	22,00	.866	4,76	3/16	0,4	1/64	5,16	.203	●	●		●	●			
TNMG220408R	TNMG432R	12,70	1/2	22,00	.866	4,76	3/16	0,8	1/32	5,16	.203	●	●	●	●	●			

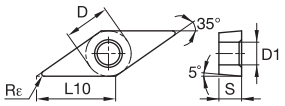
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

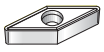
VBGT-F

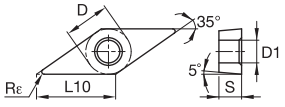




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VBGT110302F	**VBGT2205F**	6,35	1/4	11,07	.436	3,18	1/8	0,2	.008	2,80	.110
VBGT110301F	**VBGT220F**	6,35	1/4	11,07	.436	3,18	1/8	0,1	.004	2,80	.110
VBGT110304F	**VBGT221F**	6,35	1/4	11,07	.436	3,18	1/8	0,4	1/64	2,80	.110
VBGT160402F	**VBGT3305F**	9,53	3/8	16,61	.654	4,76	3/16	0,2	.008	4,40	.173
VBGT160401F	**VBGT330F**	9,53	3/8	16,61	.654	4,76	3/16	0,1	.004	4,40	.173
VBGT160404F	**VBGT331F**	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	4,40	.173

VBMT-F

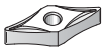


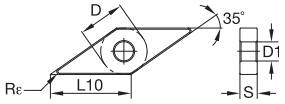


ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VBMT110302F	**VBMT2205F**	6,35	1/4	11,07	.436	3,18	1/8	0,2	.008	2,80	.110
VBMT110304F	**VBMT221F**	6,35	1/4	11,07	.436	3,18	1/8	0,4	1/64	2,80	.110
VBMT110308F	**VBMT222F**	6,35	1/4	11,07	.436	3,18	1/8	0,8	1/32	2,80	.110
VBMT160402F	**VBMT3305F**	9,53	3/8	16,61	.654	4,76	3/16	0,2	.008	4,40	.173
VBMT160404F	**VBMT331F**	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	4,40	.173
VBMT160408F	**VBMT332F**	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	4,40	.173

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

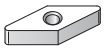


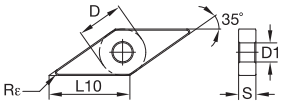


VNGP

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VNGP160401	VNGP330	9,53	3/8	16,61	.654	4,76	3/16	0,1	.004	3,81	.150
VNGP160402	VNGP3305	9,53	3/8	16,61	.654	4,76	3/16	0,2	.008	3,81	.150
VNGP220404	VNGP431	12,70	1/2	22,14	.872	4,76	3/16	0,4	1/64	5,16	.203
VNGP220408	VNGP432	12,70	1/2	22,14	.872	4,76	3/16	0,8	1/32	5,16	.203

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNGP160401							●	●
VNGP160402							●	
VNGP220404							●	●
VNGP220408							●	●

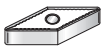


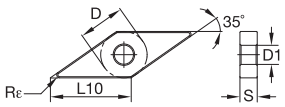


VNMA

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VNMA160408	VNMA332	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150

ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNMA160408						●		





VNMG-F

ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VNMG160404F	VNMG331F	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150
VNMG160408F	VNMG332F	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150

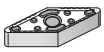
ISO catalog number	K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
VNMG160404F	●	●		●	●	●	●	●
VNMG160408F	●	●		●		●	●	●

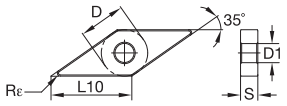
Application Specific

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

VNMG-M

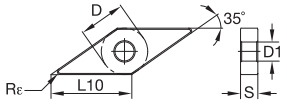




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VNMG160404M	VNMG331M	9,53	3/8	16,61	.654	4,76	3/16	0,4	1/64	3,81	.150
VNMG160408M	VNMG332M	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150

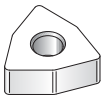
VNMG-R

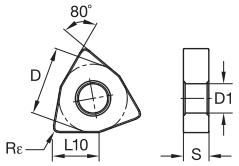




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
VNMG160408R	VNMG332R	9,53	3/8	16,61	.654	4,76	3/16	0,8	1/32	3,81	.150

WNMA



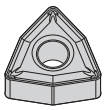


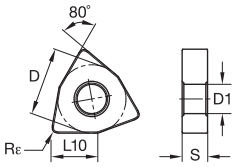
ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
WNMA060408	WNMA332	9,53	3/8	6,52	.257	4,76	3/16	0,8	1/32	3,81	.150
WNMA080408	WNMA432	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203
WNMA080412	WNMA433	12,70	1/2	8,69	.342	4,76	3/16	1,2	3/64	5,16	.203

● first choice
○ alternate choice

		K10P	K25P	K35P	K10M	K25M	K20K	K10U	K15U
P		●	●	●	○	○	○	○	○
M					●	●		●	●
K		○	○				●	○	○
N								○	○
S					○	○		●	●
H									

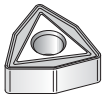
WNMG-F

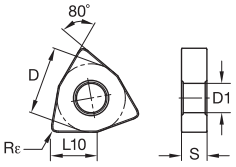




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
WNMG080404F	WNMG431F	12,70	1/2	8,69	.342	4,76	3/16	0,4	1/64	5,16	.203
WNMG080408F	WNMG432F	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203

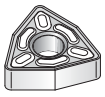
WNMG-H

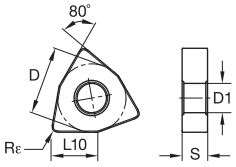




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
WNMG080408H	WNMG432H	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203
WNMG080412H	WNMG433H	12,70	1/2	8,69	.342	4,76	3/16	1,2	3/64	5,16	.203
WNMG080416H	WNMG434H	12,70	1/2	8,69	.342	4,76	3/16	1,6	1/16	5,16	.203

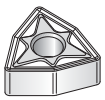
WNMG-M

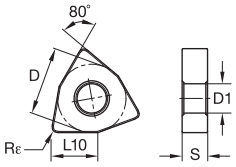




ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
WNMG080404M	WNMG431M	12,70	1/2	8,69	.342	4,76	3/16	0,4	1/64	5,16	.203
WNMG080408M	WNMG432M	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203
WNMG080412M	WNMG433M	12,70	1/2	8,69	.342	4,76	3/16	1,2	3/64	5,16	.203

WNMG-R





ISO catalog number	ANSI catalog number	D mm	D in	L10 mm	L10 in	S mm	S in	Rε mm	Rε in	D1 mm	D1 in
WNMG060408R	WNMG332R	9,53	3/8	6,52	.257	4,76	3/16	0,8	1/32	3,81	.150
WNMG080408R	WNMG432R	12,70	1/2	8,69	.342	4,76	3/16	0,8	1/32	5,16	.203
WNMG080412R	WNMG433R	12,70	1/2	8,69	.342	4,76	3/16	1,2	3/64	5,16	.203

Application Specific

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

By using the Kennametal Carbide Recycling Program, you will receive:

- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.



Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**