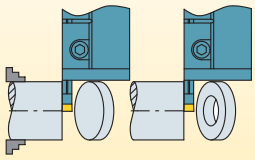
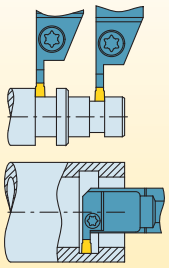
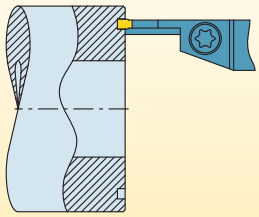
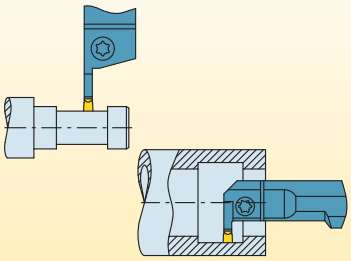
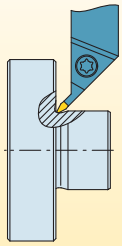
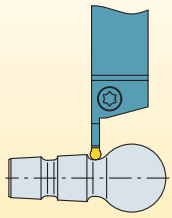
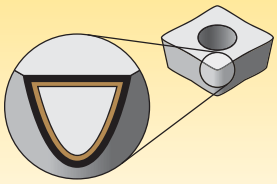
KENNAMETAL

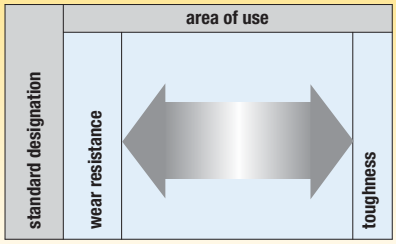
Grooving and Cut-Off

	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			

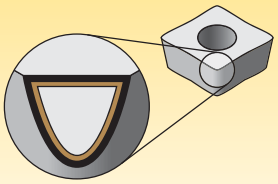


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

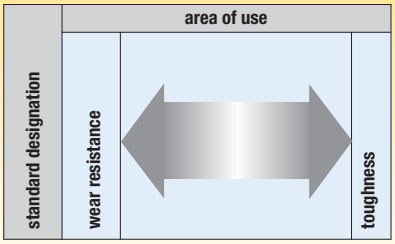


Grade

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.	M	M	M	M					
			K	K	K	K					
			N	N	N	N					
			S	S	S	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	M	M	M					
			K	K	K	K					
			N	N	N	N					
			S	S	S	S					
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.	P	P	P						
			M	M	M						
			K	K	K						
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.	N				N	N			
			S				S	S			
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.	P		P	P	P					
			M		M	M					
			K		K	K					
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.	P				P	P	P			
			M				M	M	M		
			K				K	K	K		

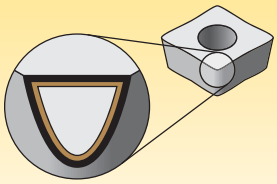


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

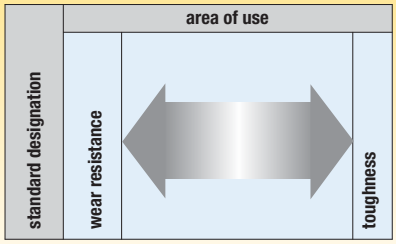


Grade

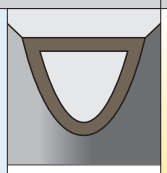
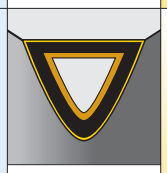
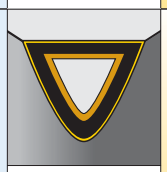
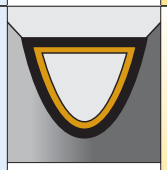
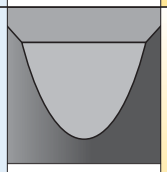
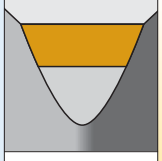
Coating		Grade Description	05	10	15	20	25	30	35	40	45
KCU10	C3–C4	**Composition:** An advanced multilayer PVD coating over a very deformation-resistant unalloyed carbide substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. **Application:** The KCU10 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								
			M								
			K								
			N								
			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								
			M								
			K								
			N								
			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								
			M								
			K								
			N								
			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								
			M								
			K								
			N								
			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								
			M								
			K								
			N								
			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								
			M								
			K								
			N								
			S								

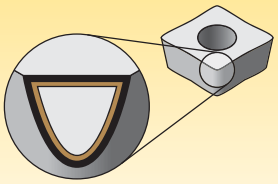


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

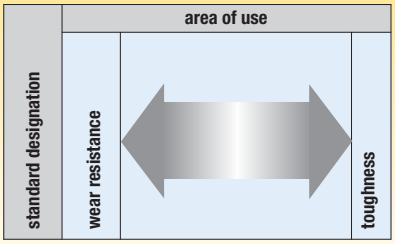


Grade

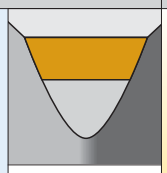
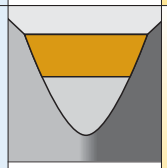
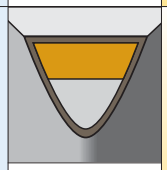
Coating		Grade Description	05	10	15	20	25	30	35	40	45
KC5410	 C3–C4	**Composition:** PVD TiB_2 coating over a thermal deformation-resistant unalloyed substrate. **Application:** The KC5410 grade is designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminum, 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.									
			N								
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.	P								
			K								
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.	P								
			K								
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.	P								
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.									
			K								
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.									
			N								
			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
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									
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									
			S									
			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									

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.

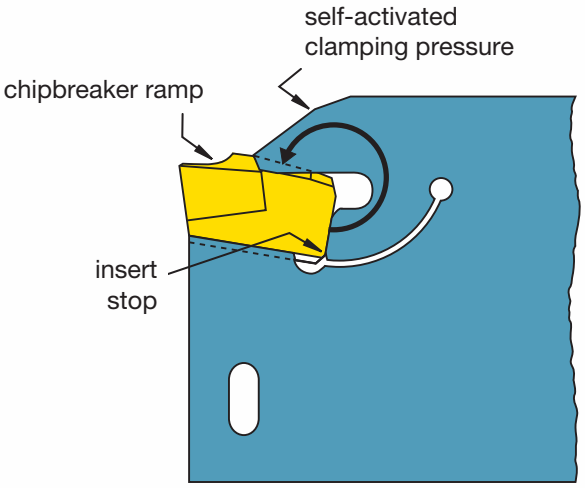
Features and Benefits

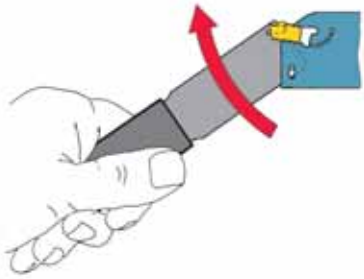
Innovative A2 Insert Design

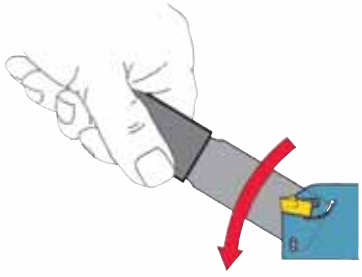
- V-prisms on both top and bottom enable higher clamping force to prevent insert movement, even when cutting at high-feed rates.
- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Positive rake cutting action combined with Kennametal's high-performance 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.



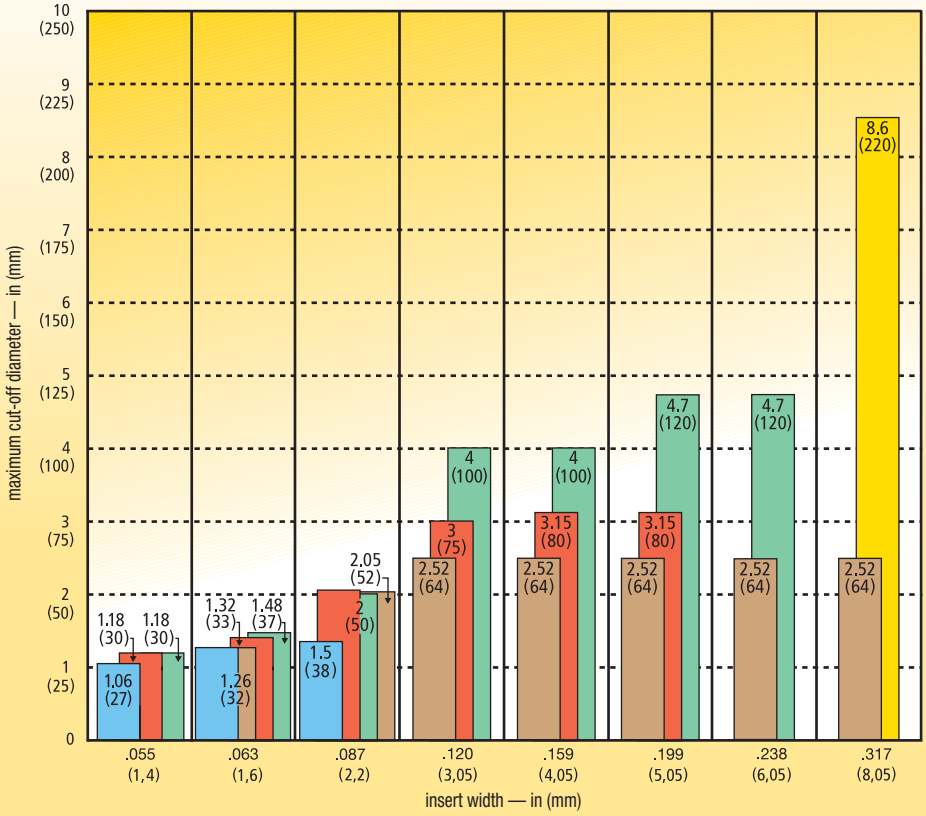




Quick and Easy Insert Indexing

- 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	

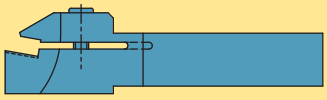
What you need to know:

- Cut-off diameter.
- Part/machine requirements.

For required cut-off diameter, select insert width and holder type based on the part and machine requirement:

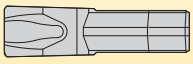
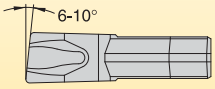
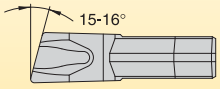
- To maximize rigidity, select the largest possible blade height or an integral shank toolholder.
- Diameters shown are for cut-off to center. Maximum cut-off depth to a through-hole depth is one half of the diameter.
- To determine depth capability for cut-off to a through-hole on integral shank or 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.

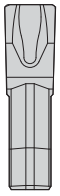
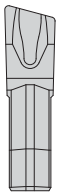
	neutral (0°)	right/left 6–10°	right/left 15–16°
insert type			
recommended application	• For cutting off solid workpieces. • Center stub will form on cut-off part. • Eliminates lateral deflection. • Best for deep cut-off depths.	• For cutting off solid workpieces with reduced formation of center stub. • 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)	—

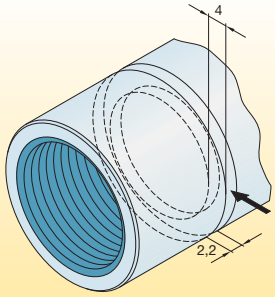
Step 5 • Select insert and holder from catalog page

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



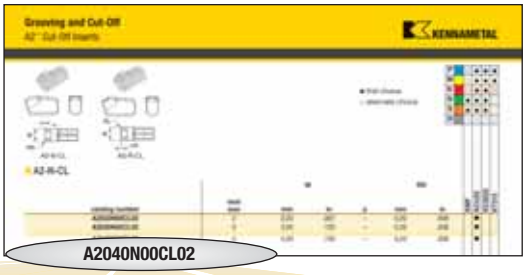
Speed: 460 SFM (140 m/min)
Feed: .002 in/rev (0,05 mm/rev)

Congratulations!

You have successfully maximized cut-off productivity by selecting the best insert, toolholder, 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.



A2040N00CL02

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

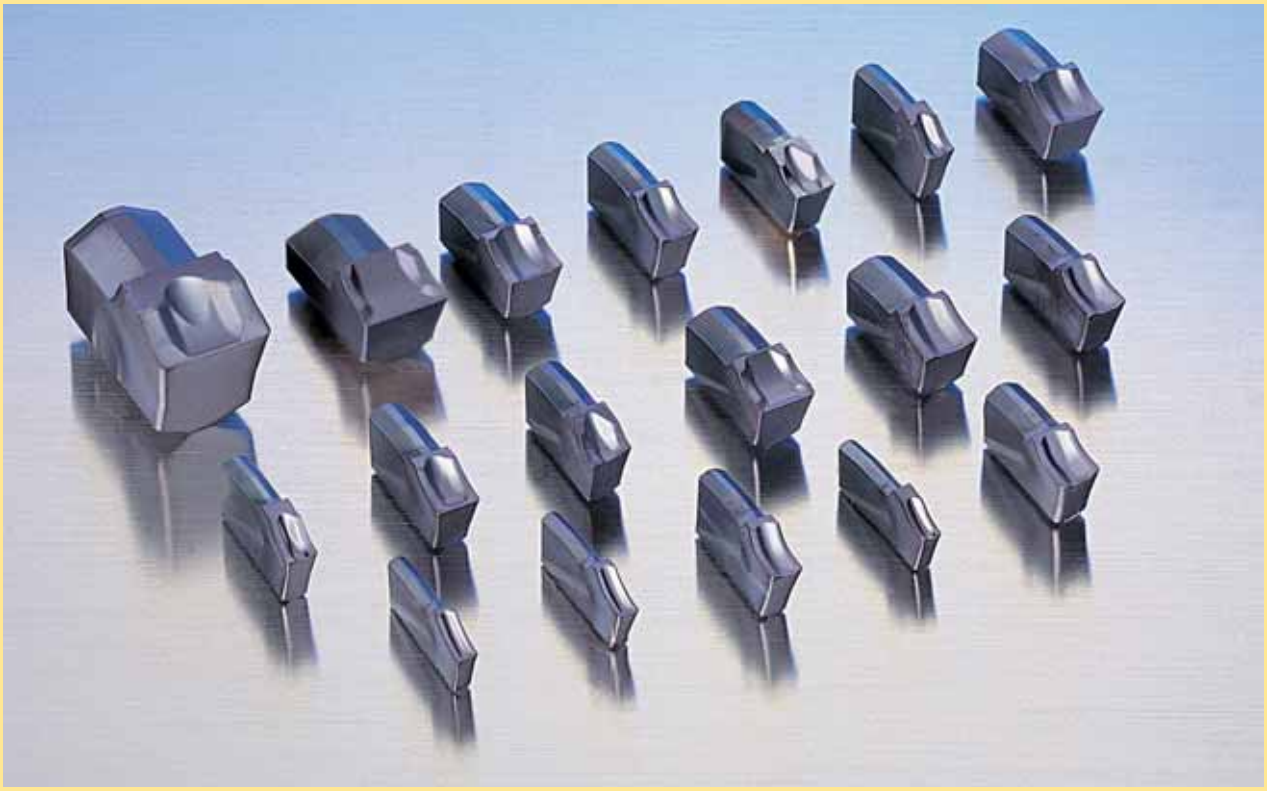
00 = Neutral
06 = 6°
10 = 10°
15 = 15°
16 = 16°

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

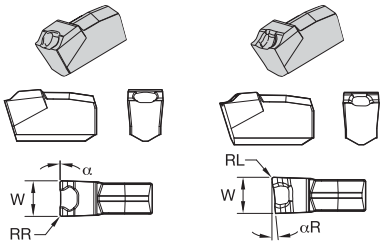
- Designed for deep grooving.
- Reach deeper depths while maintaining chip control and tool rigidity.

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

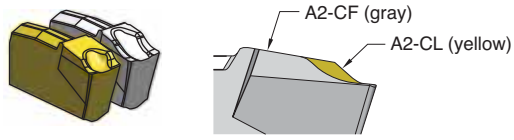
		KMF	KCU25	KC5025	KT315
P		○	●	●	●
M		○	●	●	●
K		○	●	●	○
N		●	●	●	
S		●	●	●	
H					

A2-N-CL

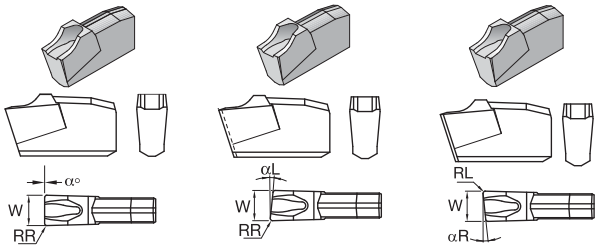
catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2022N00CL02	2	2,20	.087	–	0,20	.008		●		
A2030N00CL02	3	3,05	.120	–	0,20	.008		●		
A2040N00CL02	4	4,05	.159	–	0,20	.008		●		

A2-R-CL

catalog number	seat size	W mm	W in	αR	RL mm	RL in	KMF	KCU25	KC5025	KT315
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		inch	
width	tolerance	width	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

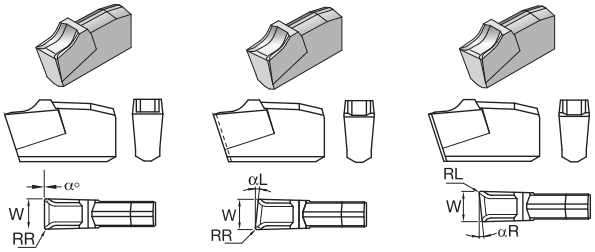
catalog number	seat size	W mm	W in	α	RR mm	RR in	KMF	KCU25	KC5025	KT315
A2014N00CF01	1B	1,40	.055	–	0,15	.006		●	●	
A2016N00CF00	1	1,55	.061	–	–	–		●	●	
A2016N00CF01	1	1,60	.063	–	0,15	.006	●	●	●	●
A2022N00CF00	2	2,20	.087	–	–	–		●	●	
A2022N00CF02	2	2,20	.087	–	0,20	.008	●	●	●	●
A2030N00CF02	3	3,00	.118	–	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	KMF	KCU25	KC5025	KT315
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	KMF	KCU25	KC5025	KT315
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

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

● first choice
○ alternate choice

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

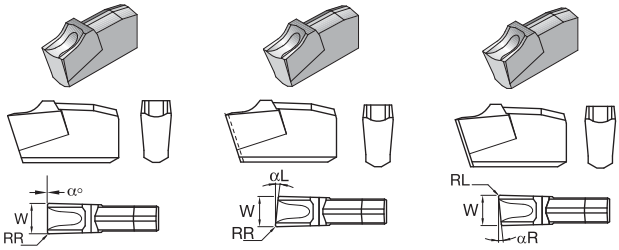
catalog number	seat size	W mm	W in	αL	RR mm	RR in	KMF	KCU25	KC5025	KT315
left hand										
A2016L06CM00	1	1,60	.063	6	–	–		●	●	
A2016L16CM00	1	1,60	.063	16	–	–		●	●	
A2022L06CM00	2	2,20	.087	6	–	–		●	●	
A2030L06CM01	3	3,00	.118	6	0,10	.004		●	●	

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

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

● first choice
○ alternate choice

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

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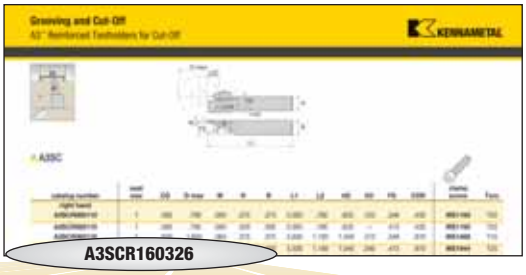


A3SCR160326

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)

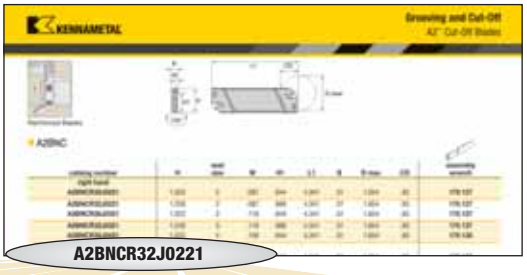
S = Standard (straight clearance)
M = Max support (straight clearance)
C = Reinforced max support (circular clearance)

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

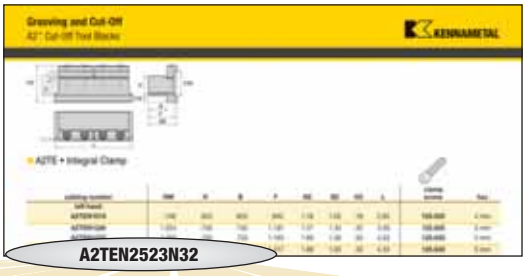
Cut-Off • Blades

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
		S = Standard **C** = Reinforced	**R** = Right **L** = Left **N** = Neutral	in (mm) 19/26/32/52			in (mm) (reinforced blade only)

BN = 2 pocket blade
BH = 1 pocket blade

Letter designation according to ISO (see table in tool block identification system below)
G = 90mm
J = 110mm
M = 150mm
X = Special

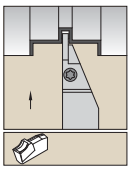
1B = 1,40mm
01 = 1,60mm
02 = 2,20mm
03 = 3,05mm
04 = 4,05mm
05 = 5,05mm
06 = 6,05mm
08 = 8,05mm

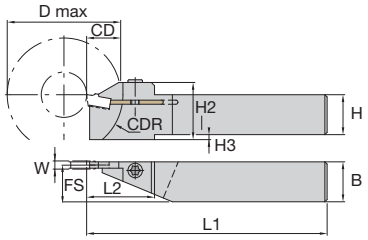


A2TEN2523N32

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



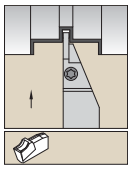


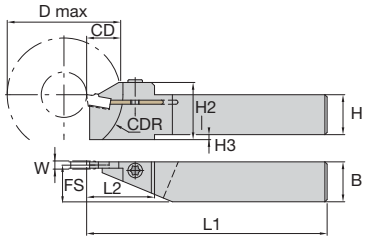
A3SC

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

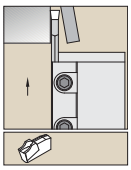
(continued)

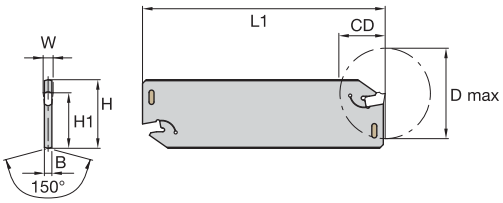
(A3SC continued)





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

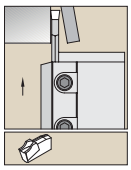


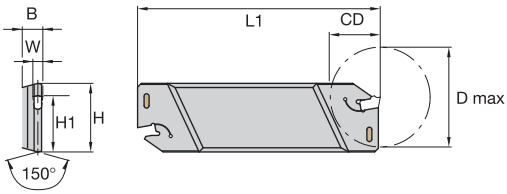


A2BNSN

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.

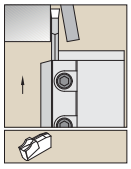

Reinforced Blades

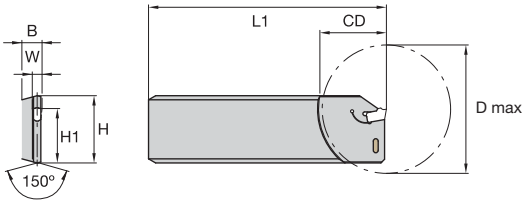


A2BNC

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.

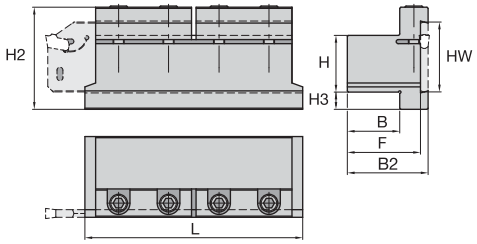

Reinforced Blades



A2BHC

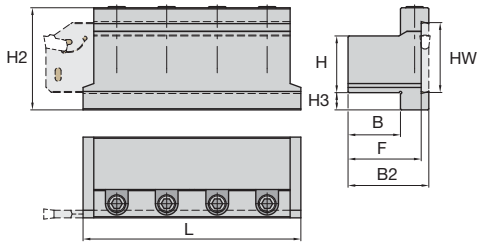
catalog number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BHCR32K0333	1.260	3	.118	.986	4.931	.31	2.598	1.30	**170.137**
A2BHCR32K0433	1.260	4	.158	.986	4.931	.31	2.598	1.30	**170.137**
left hand									
A2BHCL32K0333	1.260	3	.118	.986	4.931	.31	2.598	1.30	**170.137**
A2BHCL32K0433	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

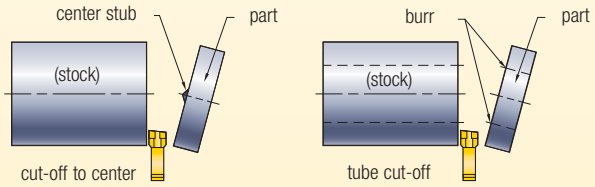
1. Width of cut (W) = width of the insert.

2. Lead angle = 0° (neutral); 4°, 5°, 12°, 18° (RH or LH).

Reduce burr of cut-off faces:

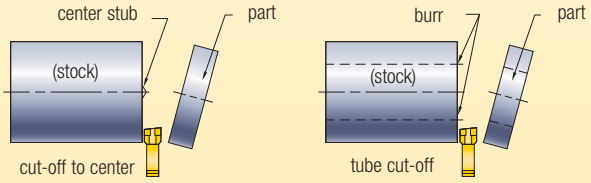
- Use lead angle-type inserts (Figures 1 and 2). Lead angle on a cut-off insert reduces the burr that remains on the part but decreases tool life and increases tool-side deflection and possibly cycle time.

Figure 1
Insert selection **left-hand lead**



Left-hand lead insert leaves center stub or burr on part and produces clean stock surface.

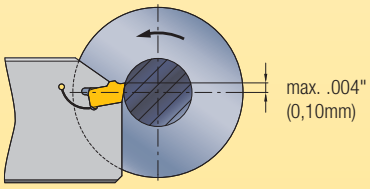
Figure 2
Insert selection **right-hand lead**



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.

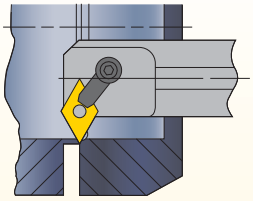


Figure 4
Internal chamfer line up

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.

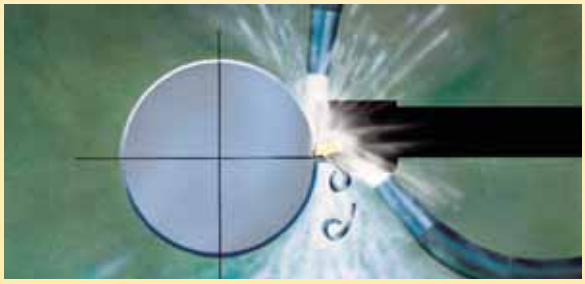


Figure 5
Preferred method for applying coolant

- 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.

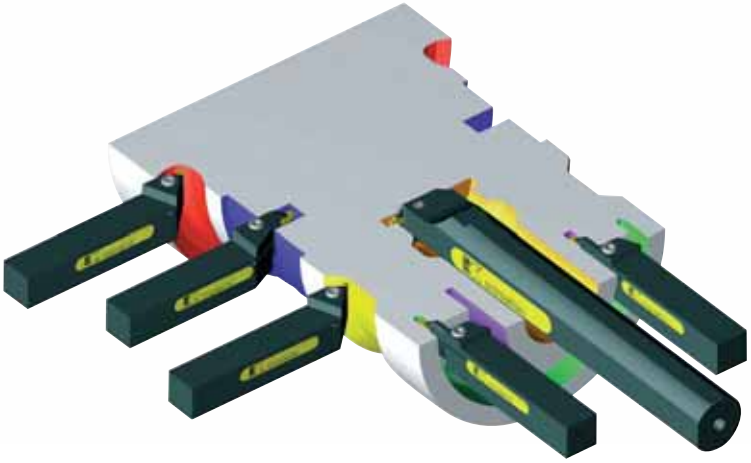
Features and Benefits

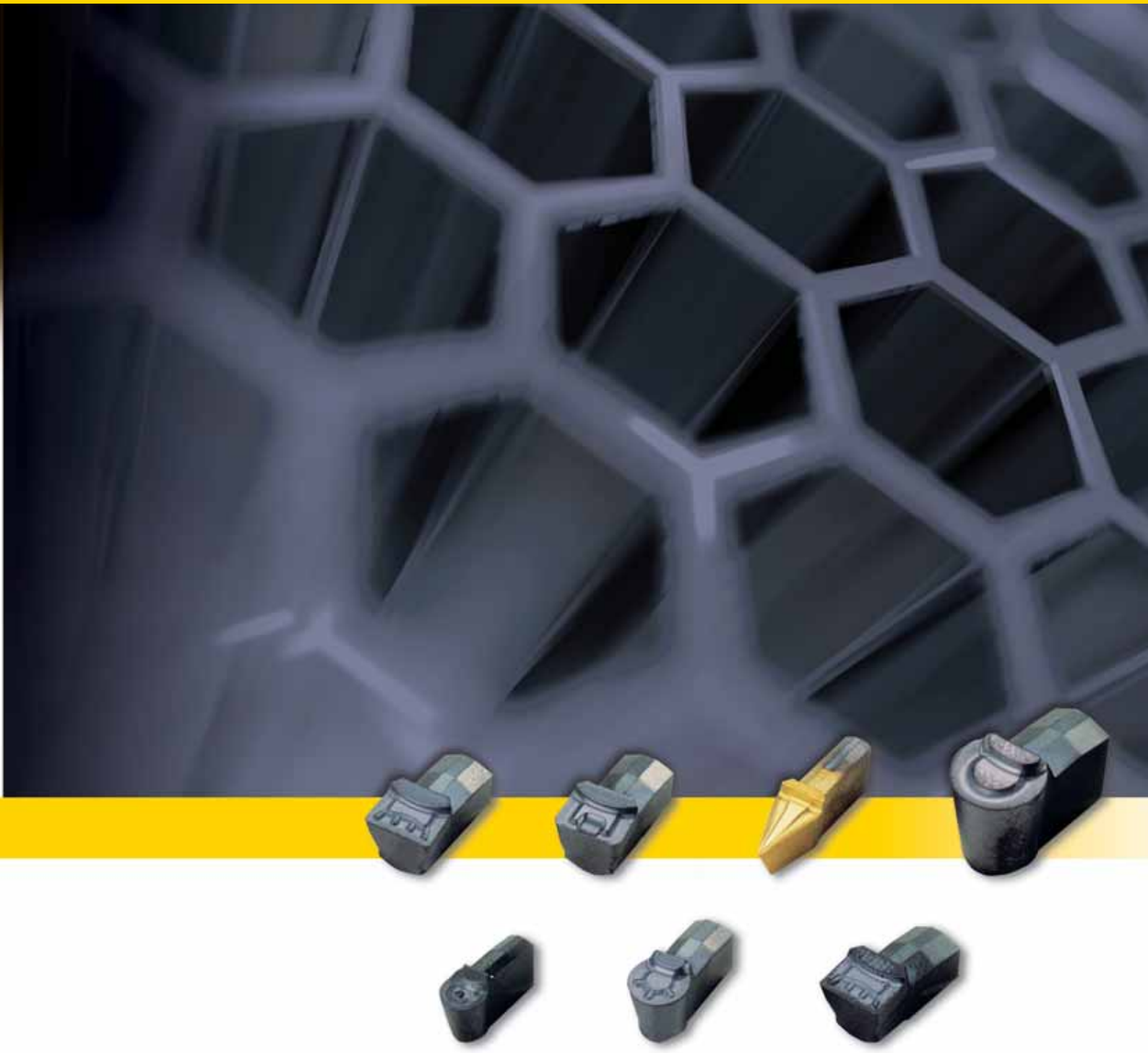
Performance

- 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™

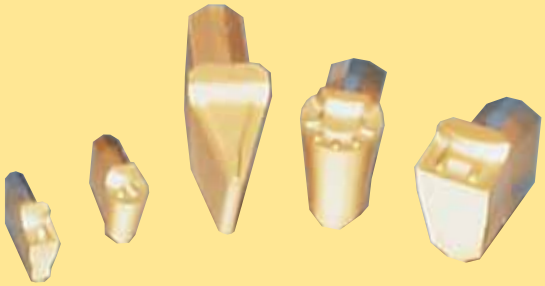
Deep Grooving
For grooving depth ≥1.5x grooving width, proceed to Step 2 for the A3 Deep Grooving program or see A4 Grooving and Turning program on page D70.

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

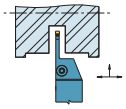
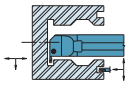
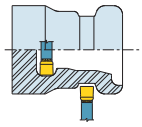
Step 3 • Select chipbreaker style and feed rate

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.

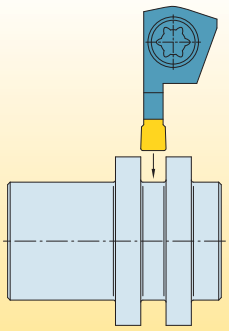
Step 5 • Select insert and holder from catalog page

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



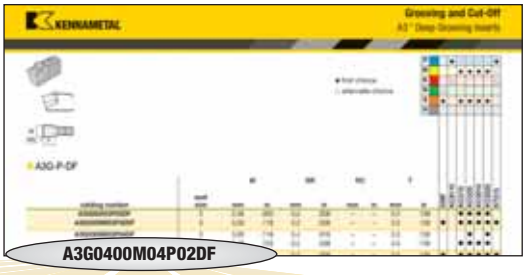
Speed: 570 SFM (180 m/min)
Feed: .008 in/rev (0,15 mm/rev)

Congratulations!

You have successfully maximized your productivity by selecting the best A3 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.



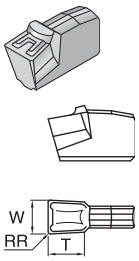
A3G0400M04P02DF

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.

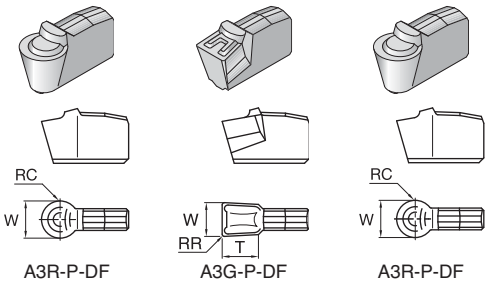


● first choice
○ alternate choice

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



● first choice
○ alternate choice

	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
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

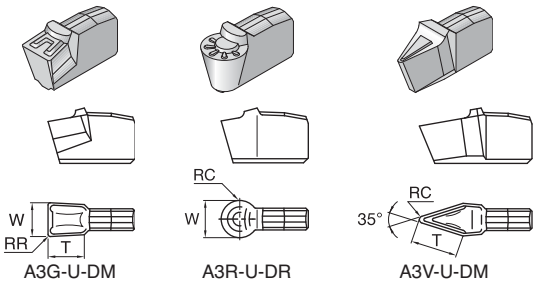
catalog number	seat size	W mm	W in	RR mm	RR in	RC mm	RC in	T mm	T in	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0300M3SP02DF	3S	3,00	.118	0,2	.008	–	–	3,5	.138				●	●	●	
A3G0300M3SP04DF	3S	3,00	.118	0,4	.016	–	–	3,5	.138			●	●	●	●	
A3G125I3SP05DF	3S	3,18	.125	0,2	.008	–	–	3,5	.138						●	
A3G0400M4SP04DF	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").



	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
P		●	○	○	○	○	●
M				●	●	●	○
K		○					○
N	○						
S	●		●	●	●	●	
H							

● first choice
○ alternate choice

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	–	–		●		●		●	

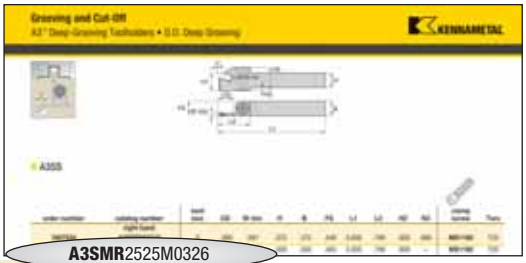
A3V-U-DM

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.



A3SMR2525M0326

A3SSR160326

Metric

A3	S	M	R

Inch

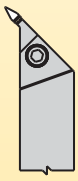
A3	S	S	R
Type of Program	Tool Style	Support Type	Hand of Tool

A3 = Screw Clamp Holder

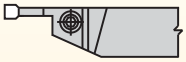
S = Straight

D = 45" profiling

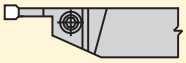
P = 117.5º V-profiling
U = 93º V-profiling



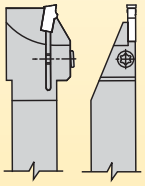
S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters



M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

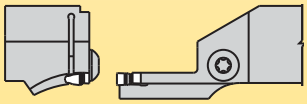


C = Reinforced maximum support width circular clearance



A = Inboard sweep face grooving toolholder

B = Outboard sweep face grooving toolholder



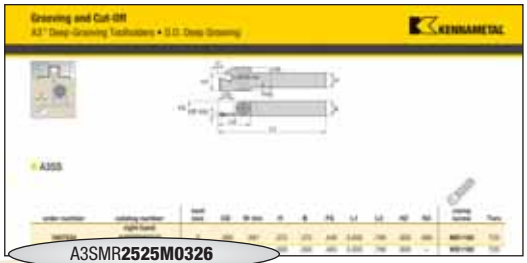
R = Right

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.



A3SMR**2525M0326**

A3SSR**160326**

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

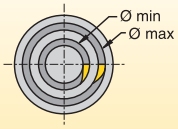
inch:
For square shanks, the number indicates the height and width in 1/16" increments
(rectangular:
1st digit = width in 1/8" increments,
2nd digit = height in 1/4" increments)

metric tool length (mm)

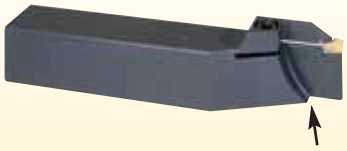
J = 110 **K** = 125 **X** = Other length
M = 150
P = 170

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

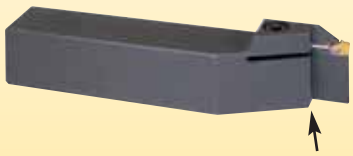


Screw-Clamping Holder Options



Example:
A3SCR -1603-26

circular clearance



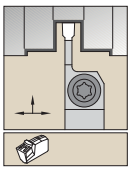
Example:
A3SSR-1605-26

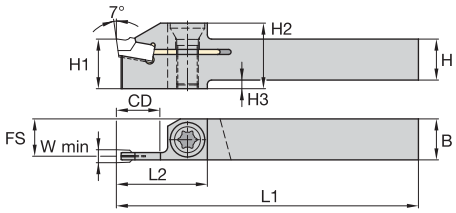
straight clearance

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.



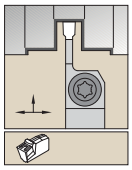


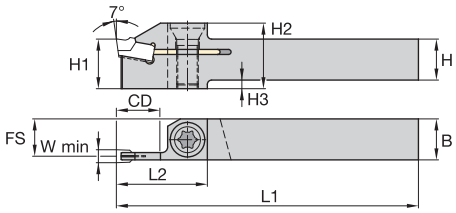
A3SS

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

(continued)

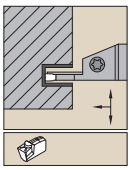
(A3SS continued)

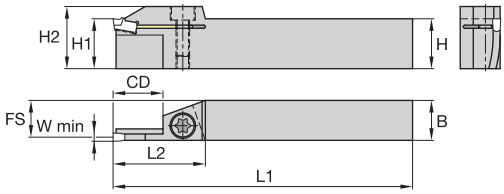


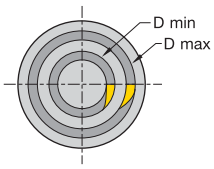


order number	catalog number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	left hand													
1607527	**A3SSL080310**	3	.390	.087	.500	.500	.465	3.500	.790	.500	.600	—	**MS1160**	T20
1607801	**A3SSL080316**	3	.630	.087	.500	.500	.465	3.500	1.100	.500	1.040	.320	**MS1944**	T25
1607803	**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.





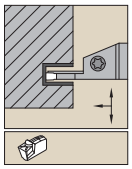


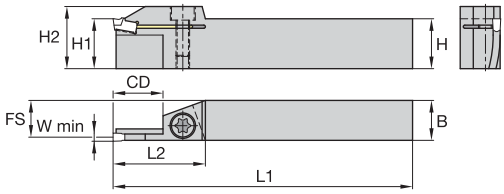
A3SA

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

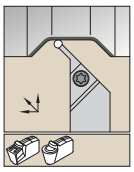
(continued)

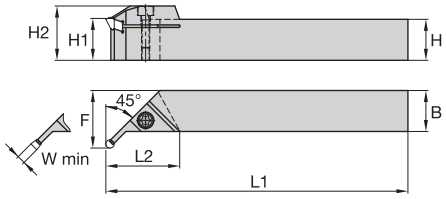
(A3SA continued)





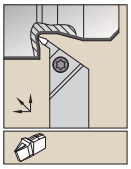
order number	catalog number	seat size	D min	D max	W min	CD	H	B	L1	L2	H1	H2	clamp screw	Torx
	left hand													
1513531	**A3SAL120425060075**	4	2.362	2.953	.158	.980	.750	.750	6.000	1.650	.750	1.197	**MS1970**	T30
1513537	**A3SAL160425060075**	4	2.362	2.953	.158	.980	1.000	1.000	6.000	1.650	1.000	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

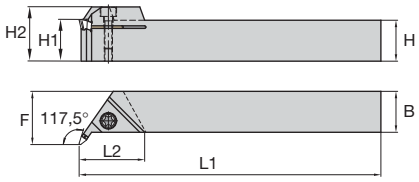




A3DS

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

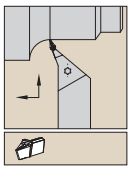


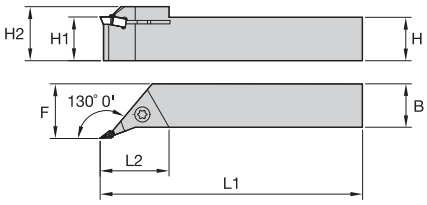


A3PS

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.





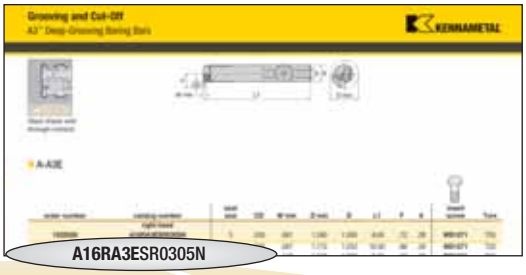
A3US

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.

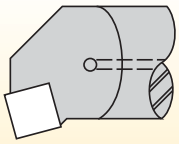
How Do Catalog Numbers Work?

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.

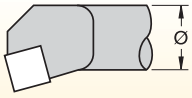


A16RA3ESR0305N

A
Steel Bar with Coolant



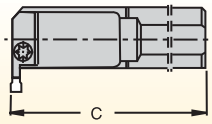
16
Bar Diameter



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

metric bars:
Bar diameter in millimeters

R
Bar Length

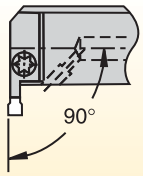


inch bars:
R = 8"
S = 10"
T = 12"

metric bars:
R = 200mm
S = 250mm
T = 300mm

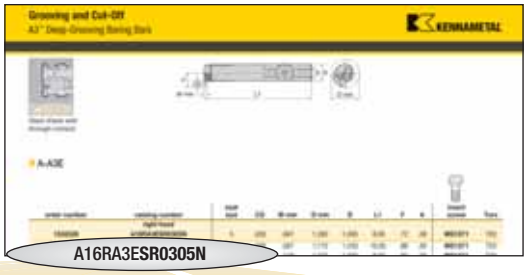
A3
A3 System

E
Tool Style



E = End mounted (90°)

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



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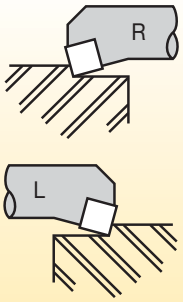
S
Support Type

S = Standard support for a wide range of groove widths

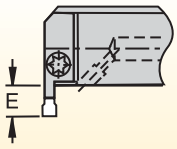
R
Hand of Tool



03
Seat Size

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

05
Grooving Depth in mm

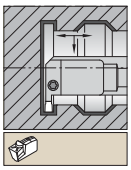


conversions:

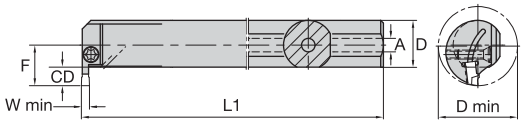
mm		inch
5mm	=	.20"
8mm	=	.32"
10mm	=	.39"
12mm	=	.47"
15mm	=	.59"

N
Tool Units

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.

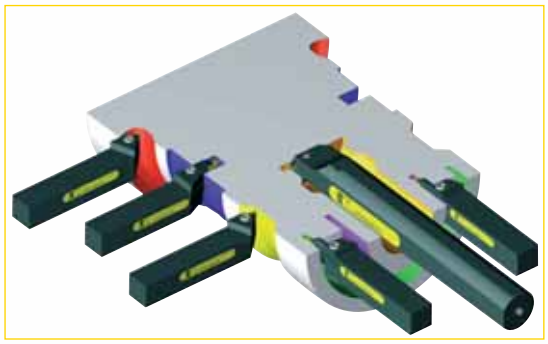
The A3 System is designed specifically for deep grooving operations. The A3 platform enables customers to reach deeper depths while maintaining chip control and tool rigidity.

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.



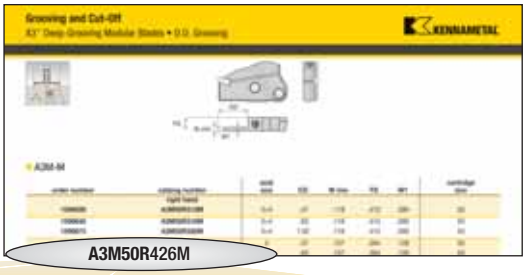
Experience the advantages at your Authorized Kennametal Distributor or at **www.kennametal.com**.

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.

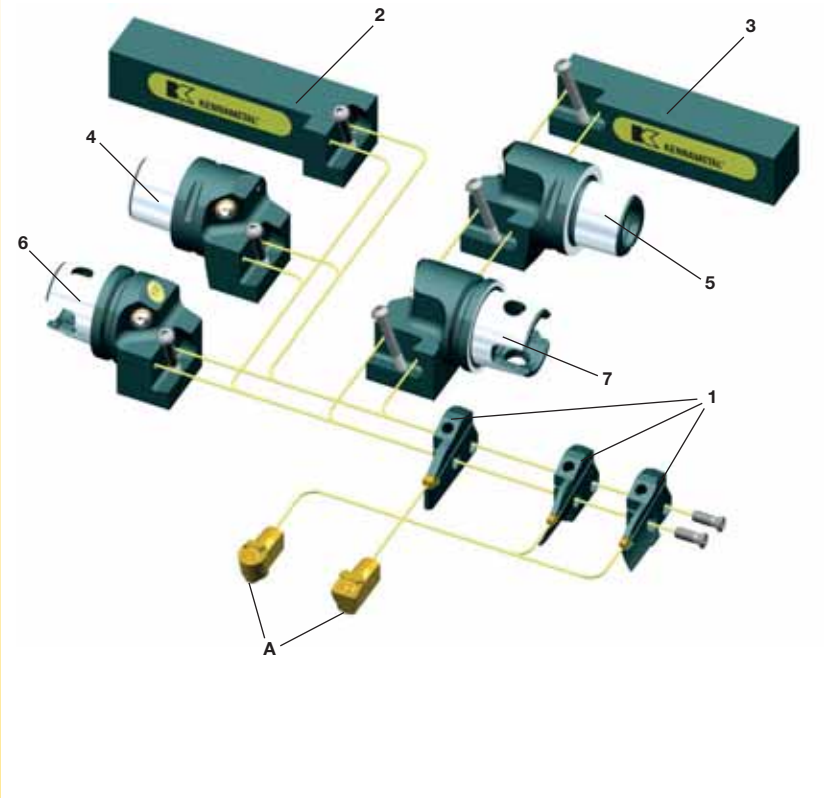


A3M50R426M

A3M	50	R
A3 Modular Grooving System	Blade Size	Hand of Tool

R = Right hand

L = Left hand

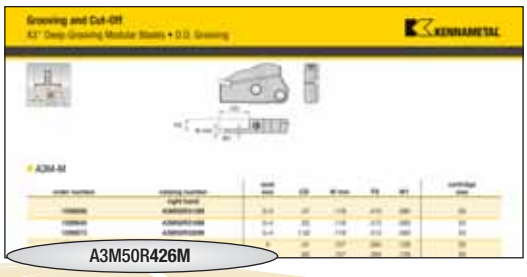


Legend		page(s)
A	A2™/A3 Inserts	D30–D33
1	O.D. and Face Grooving Blades	D46–D50
2	KGME Toolholder	D55
3	KGMS Toolholder	D54
4	Capto® KGME Cutting Unit	D58
5	Capto KGMS Cutting Unit	D58
6	KM™ KGME Cutting Unit	D57
7	KM KGMS Cutting Unit	D56–D57

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.



A3M50R426M

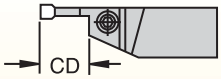
4

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



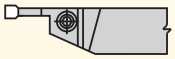
conversions:

mm		inch
12mm	=	.47
16mm	=	.63
20mm	=	.79
26mm	=	1.02
32mm	=	1.26

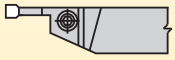
M

Tool Style

S = Standard support for a range of groove widths and straight clearance for unlimited workpiece diameters

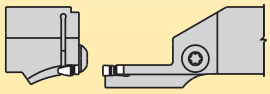


M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

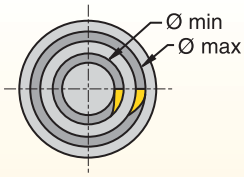


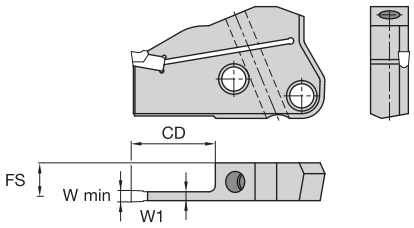
A = Inboard sweep face grooving toolholder

B = Outboard sweep face grooving toolholder



Face Grooving Diameter Range

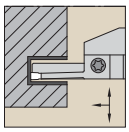


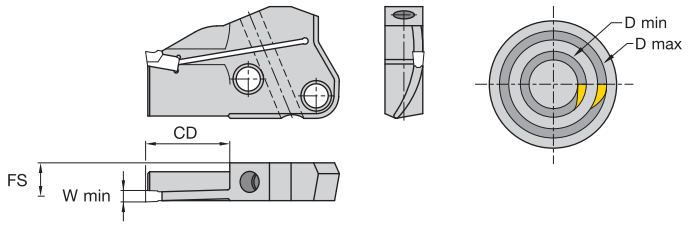


A3M-M

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

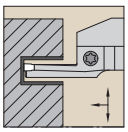
NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.

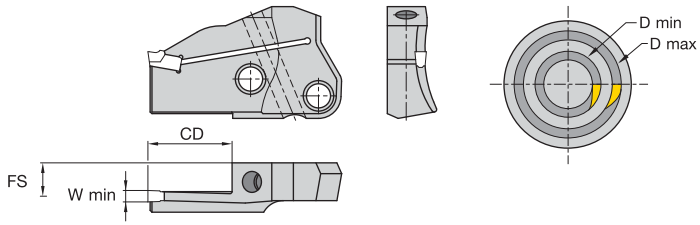




A3M-A Inboard Sweep

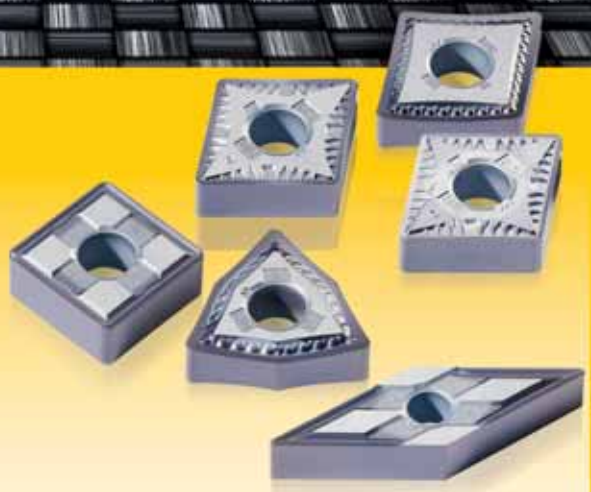
order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542476	A3M50R312A025030	3S	.984	1.181	.118	.47	.413	50
2542477	A3M50R312A030035	3S	1.181	1.378	.118	.47	.413	50
2542478	A3M50R316A035040	3S	1.378	1.575	.118	.63	.413	50
2542479	A3M50R316A040050	3S	1.575	1.969	.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

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®

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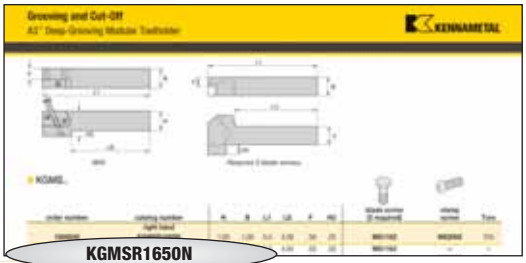


KGMSR1650N

KGMSR2525M50

Inch

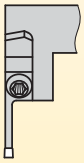
KGM	S	R	16	50	N	

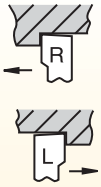
Metric

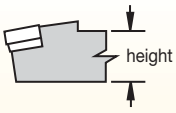
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

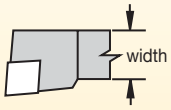
E







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

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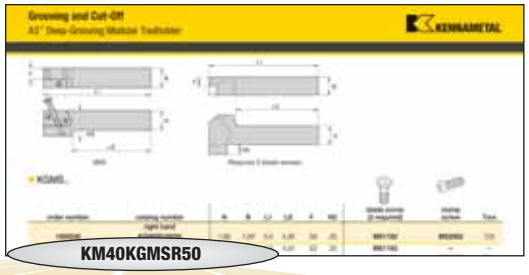
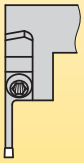


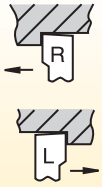
KM40KGMSR50

KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S

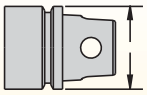
E



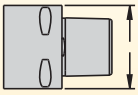


Y = Mazak® INTEGREX® Y-series machines

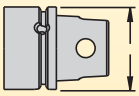
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



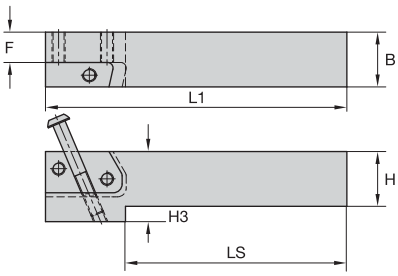
Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



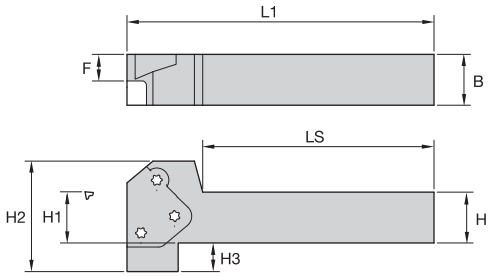
KMXMZ size
KM63XMZ™ = 63mm dia.



(KM-KGMSR...) (KM-KGMEL...)



M50
2 blade screws required

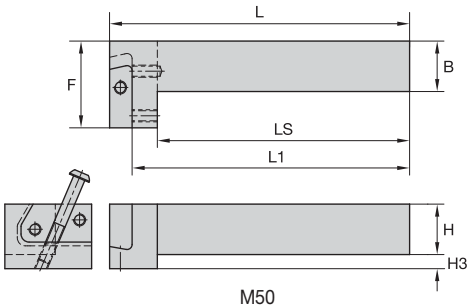


M65
3 blade screws required

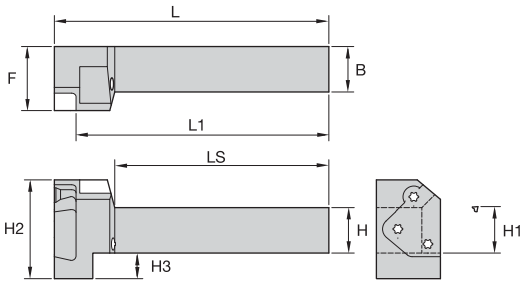
KGMS..


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

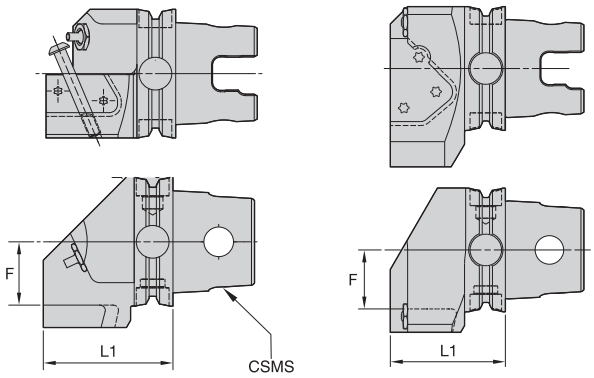


M65
3 blade screws required

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	**—**	—

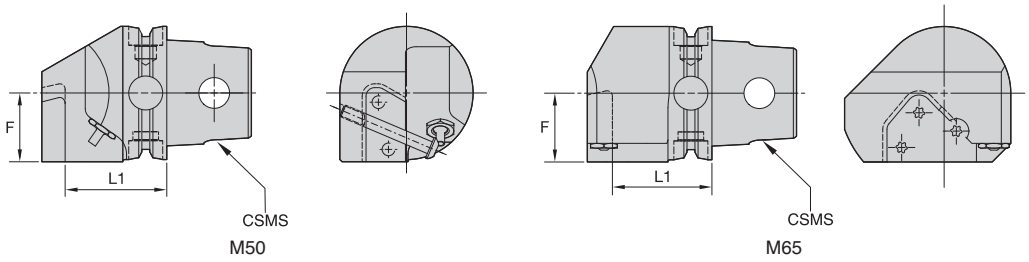
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



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.



KM-KGME..

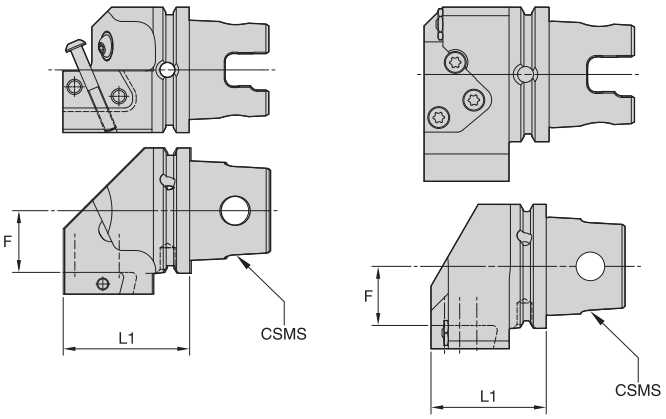
order number	catalog number	CSMS system size	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand									
3950266	**KM40TSKGMER50**	KM40TS	28,0	1.10	20,5	.81	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	1.50	25,5	1.00	**MS1162**	T25	**MS2002**	T25
3747136	**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.

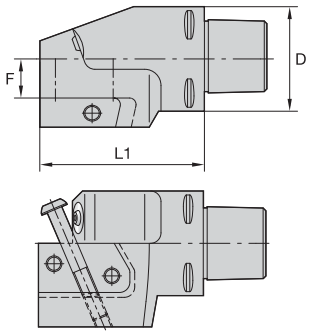


M50 M65

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	**–**	–

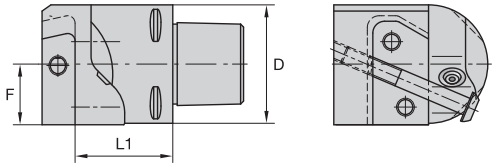
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on pages D59–D60.



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.



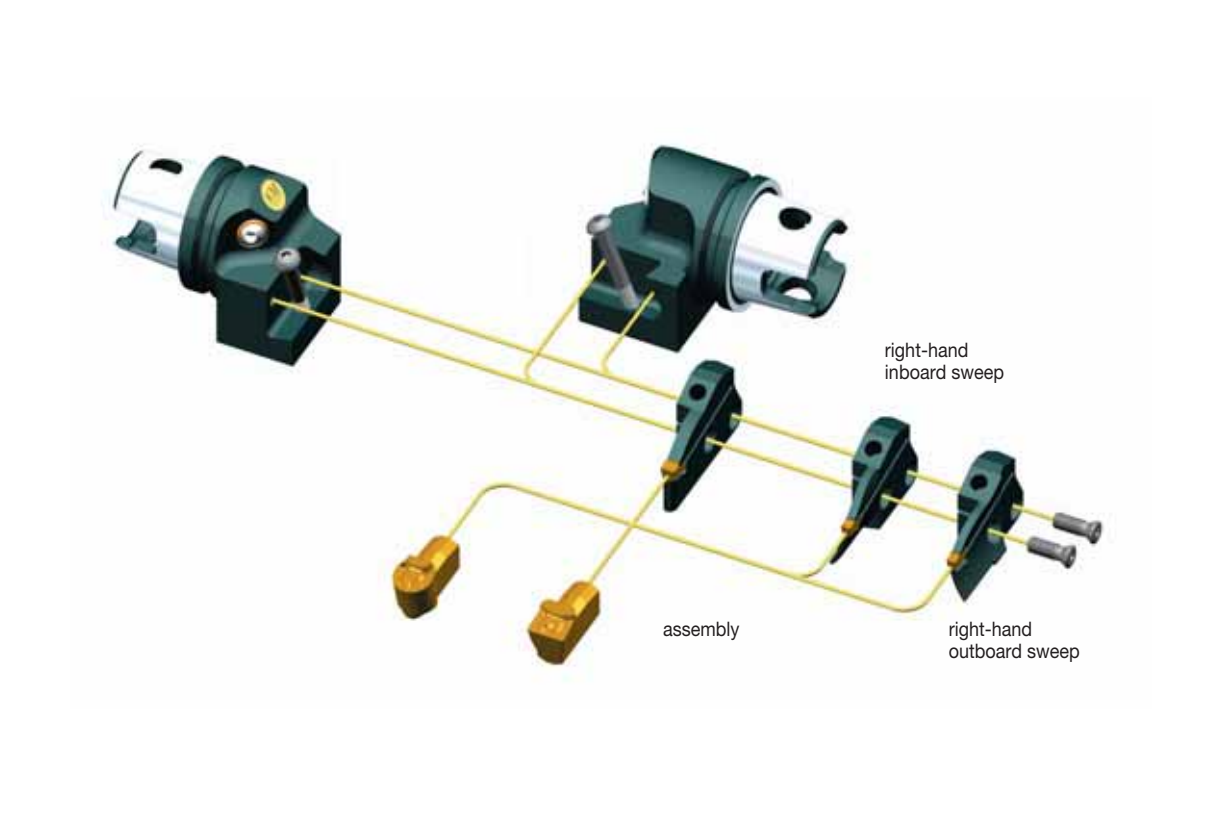
C-KGME

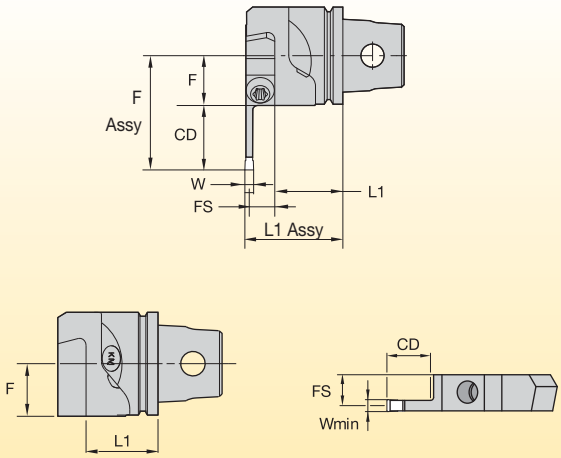
order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756579	**C4KGMER50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**MS2002**	T25
	left hand										
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.

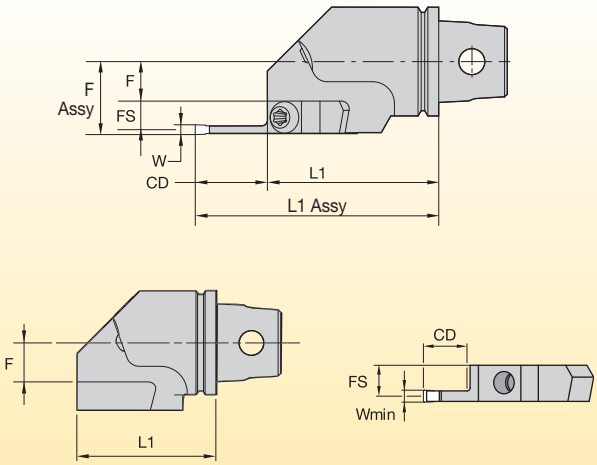
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





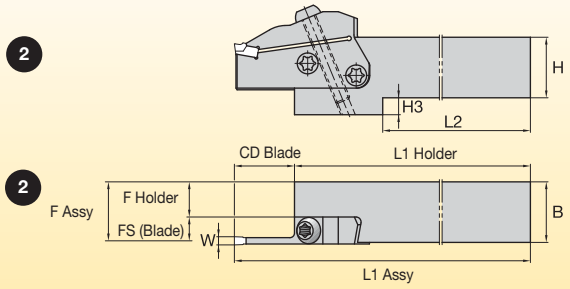
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

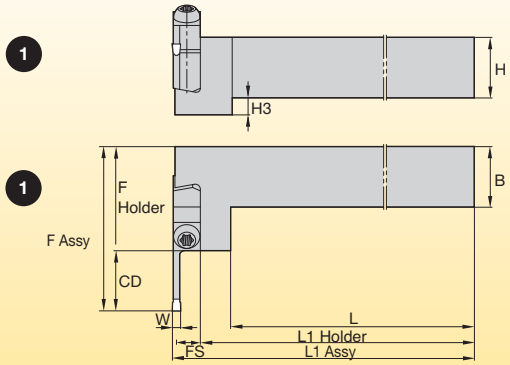
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



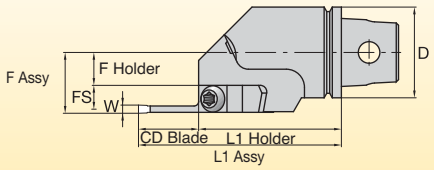
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



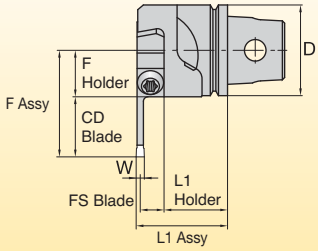
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



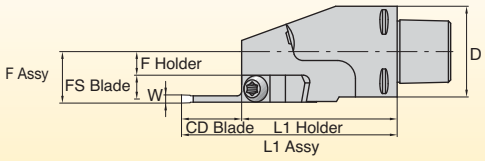
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



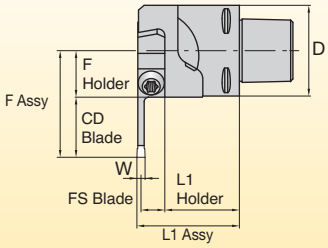
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

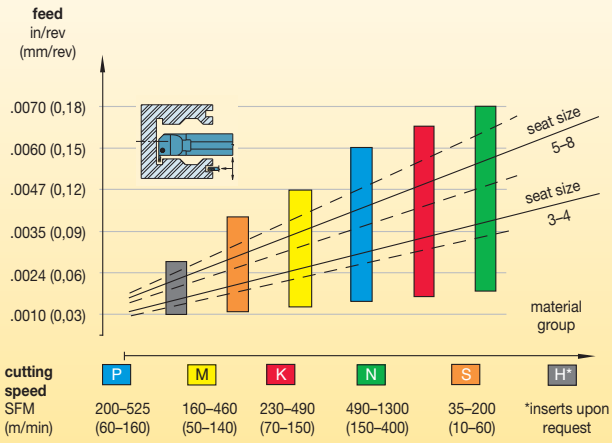
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

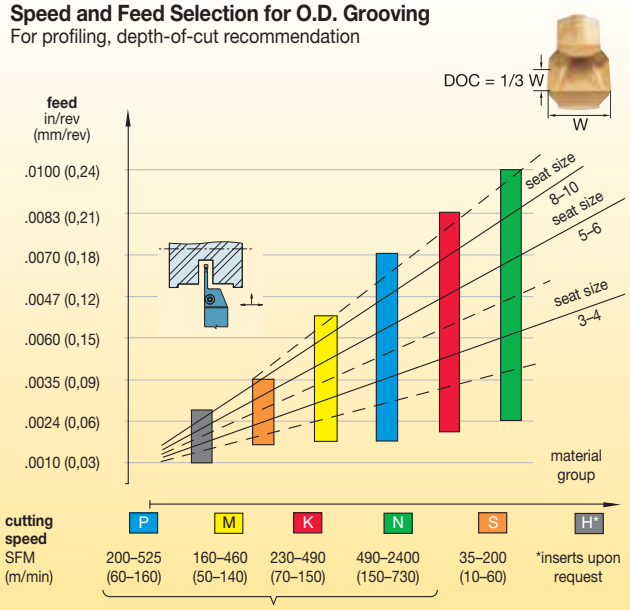
Application Guidelines

Speed and Feed Selection for I.D. and Face Grooving



Speed and Feed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

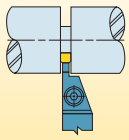


For radial grooving under stable conditions, feed can be increased by up to 50%.

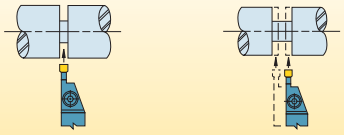
Tool Application Guidelines

- 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

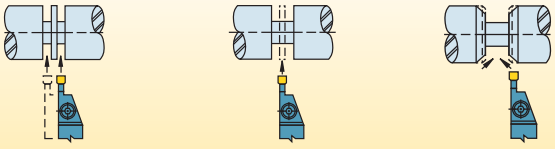


Deep Grooves Slightly Wider than the Tool



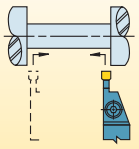
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

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.

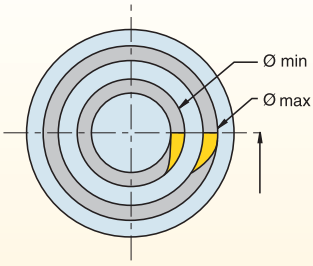
Finish Turning of the Groove/Light Profiling



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

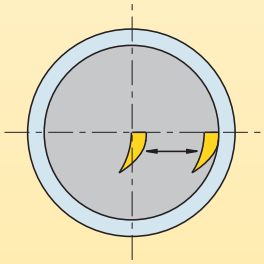
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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

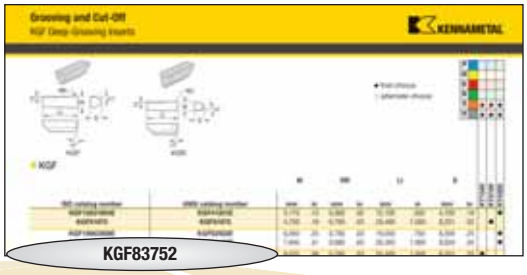
- Rigid bridge clamping system.
- Fast and easy tool change by loosening one screw.
- High-quality standard, close tolerances.

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.

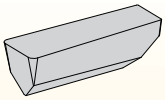


KGF83752

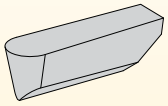
VG Deep-Grooving Inserts

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

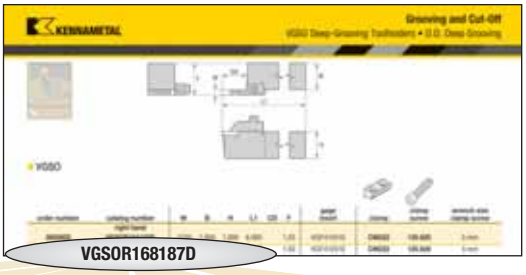
inch = 1/1000"

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.

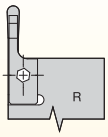


VGSOR168187D

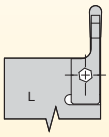
V-Bottom Deep-Grooving Inserts

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

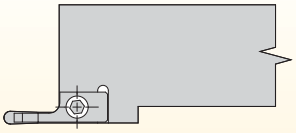
R = Right



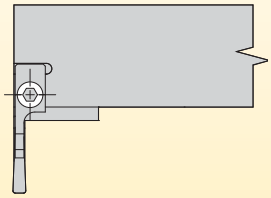
L = Left

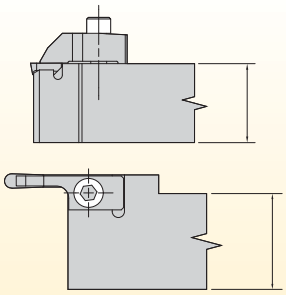


S



E



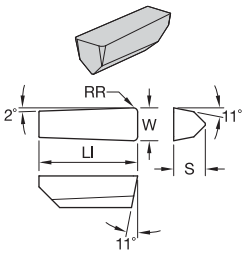


square shanks =
The number indicates the toolholder cross section in 1/16" increments.

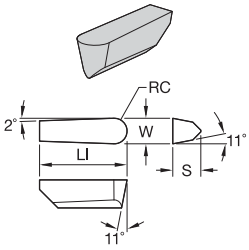
rectangular shanks =
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

D =
Qualified back and end, 6" long

E =
Qualified back and end, 7" long



KGF



KGR

● first choice
○ alternate choice

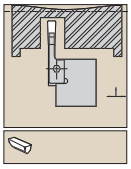
	KY1540	KY2100	KY4300
P			
M			
K			
N			
S	●	●	●
H	●	●	●

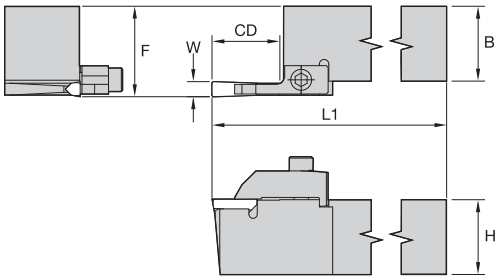
KGF

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.

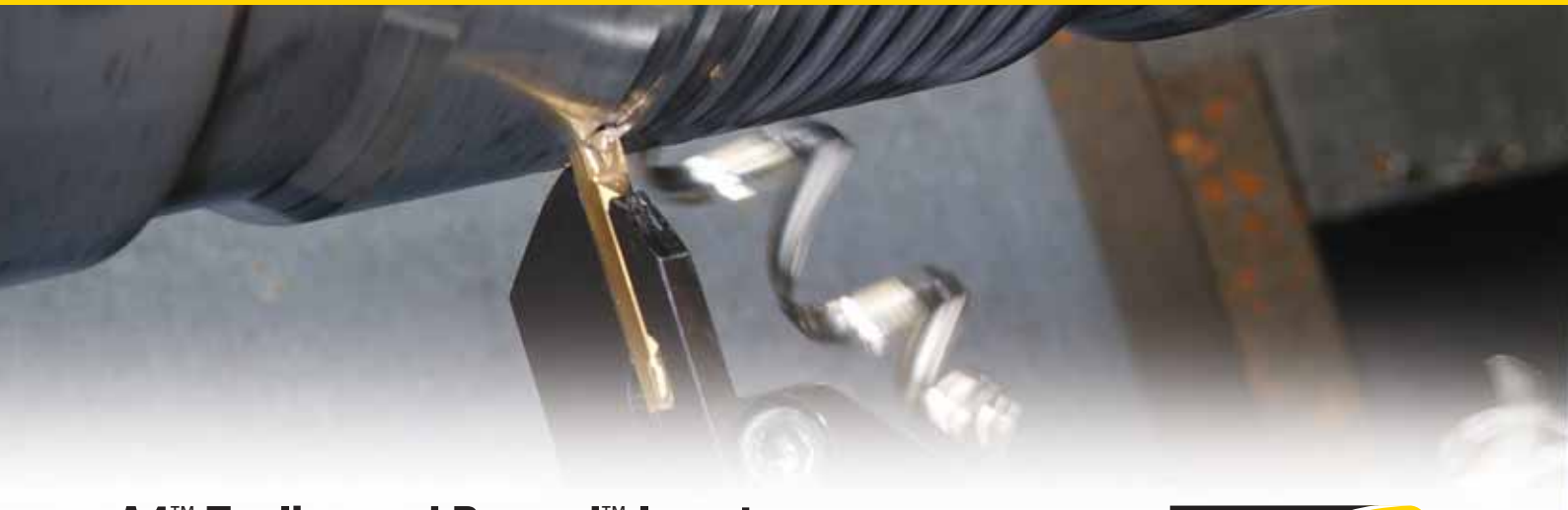
The A2 platform is the ideal system for parting operations on a wide variety of workpiece materials. It works well in smooth and interrupted cuts in both wet and dry operations. Now it is available in KCU25™ for superior edge toughness and excellent wear resistance.

- 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

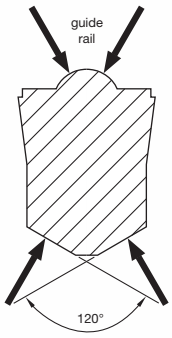
Primary Application

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

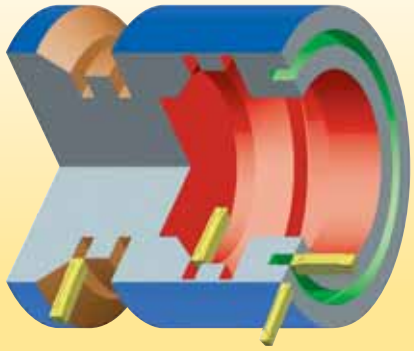
- Covers multiple applications.
- Reduces tool cost.
- Minimizes machining time.

*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).



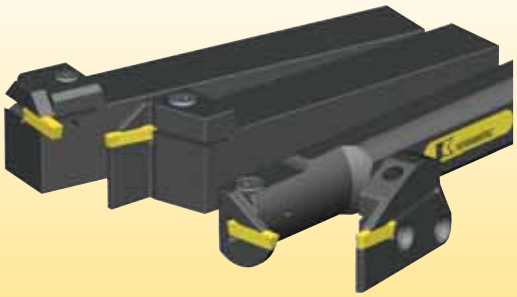
General Recommendation to Select the Insert Size

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

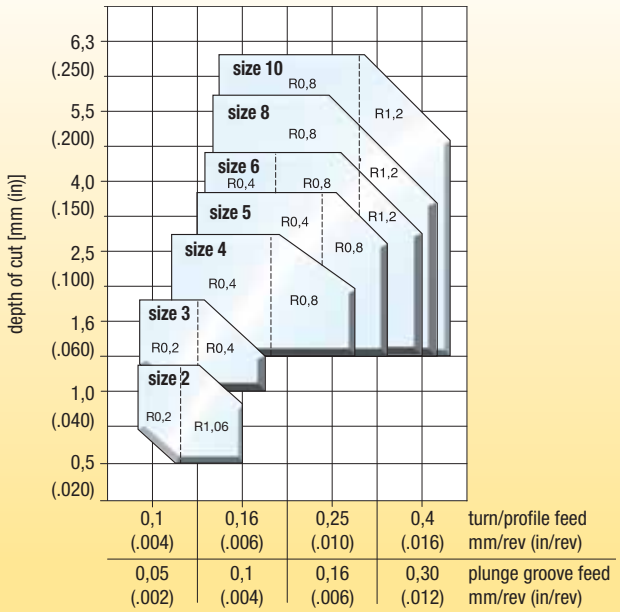
P	M	N	S	H
GMN	GUP/GMP	GUP/GMP precision ground (-E for KD 1405)	GUP/GMP precision ground	GMN

NOTE: Precision ground A4-P-GMN inserts can be applied on all material groups for inch-width grooving.

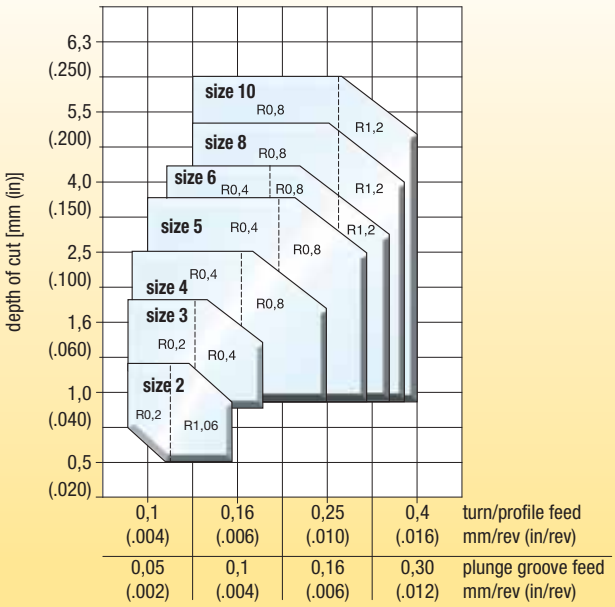
Depth of Cut and Feed Guidelines

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.

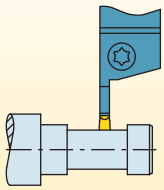
Example for A4 — Groove and Turn

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



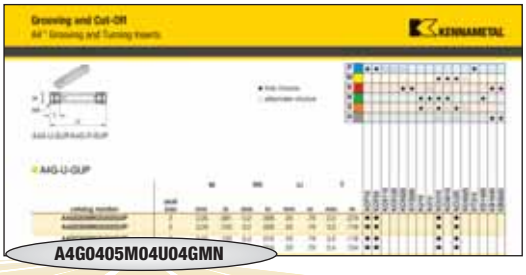
Speed: 650 SFM (200 m/min)
Feed: .010 in/rev (0,25 mm/rev)
Plunge feed: .006 in/rev (0,14 mm/rev)

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.



A4G0405M04U04GMN

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

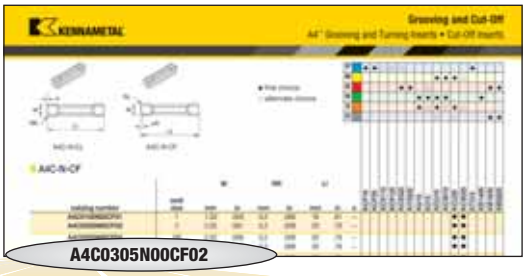
GUP = Grooving and turning high positive geometry. Especially in stainless steels and high-temp alloys

B = Flat top for special forms and applications

E = Flat top, slight honed edge

S = Negative land plus hone

ST = Single tip

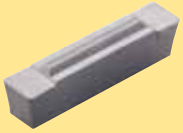


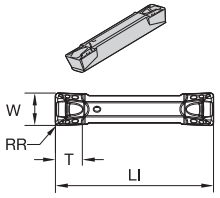
A4C0305N00CF02

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

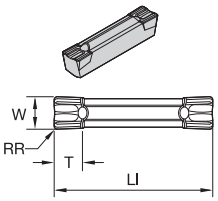
	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

A4G-U-GUP

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	●	●							●		●					

A4G-P-GUP

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
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											●					



A4G-U-GMP/A4G-P-GMP

● first choice
○ alternate choice

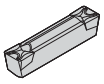
	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

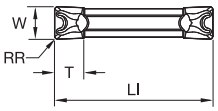
A4G-U-GMP

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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				●								●				

A4G-P-GMP

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
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									●	●						





A4G-U-GMN/A4G-P-GMN

● first choice
○ alternate choice

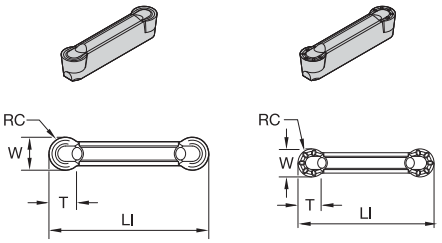
	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

A4G-U-GMN

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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			●	●								●				

A4G-P-GMN

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
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									●	●	●	●				



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

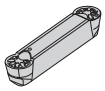
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0200M02P00GMP	2	2,00	.079	1,0	.039	20	.79	1,7	.067									●	●	●	●				
A4R0300M03P00GMP	3	3,00	.118	1,5	.059	20	.79	2,5	.099								●	●	●	●	●				
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								●								

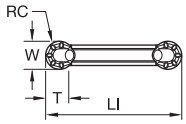
A4R-U-GMN

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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

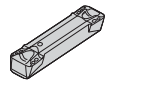
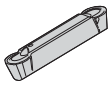
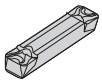
	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

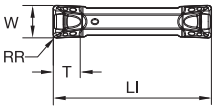
A4R-P-GUP

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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											●					

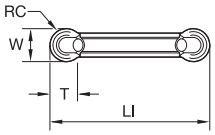
A4R-U-GUP

catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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											●					

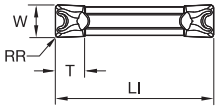






A4G-SU-GUP/A4G-SP-GUP



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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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

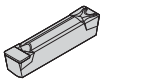
catalog number	seat size	W mm	W in	RC mm	RC in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0200M2SP00GMP	2S	2,00	.079	1,0	.039	20	.79	1,7	.067											●					
A4R0300M3SP00GMP	3S	3,00	.118	1,5	.059	20	.79	2,5	.099											●					
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											●					

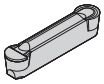
NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.

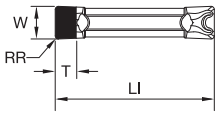
A4G-SU-GMN • Small Diameter Face Grooving

catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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									●		●					

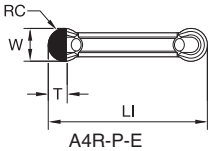
NOTE: A4-S inserts are reduced-height A4 inserts.
For example, a 2S seat size holder will not accept a seat size 2 insert.







A4G-P-E



A4R-P-E

● first choice
○ alternate choice

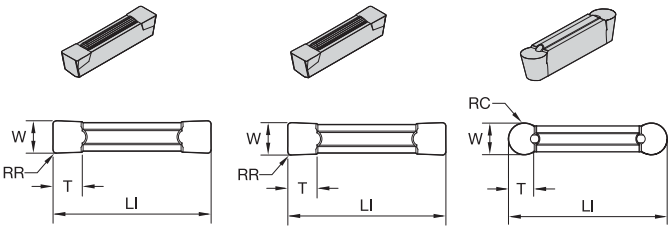
	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P	●	●	○	○	○								●			
M									●	●	●	○				
K					●	●		○							●	●
N							●	●	●	●				●		
S							●	○	●	○	●	○				
H									○		○				●	●

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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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

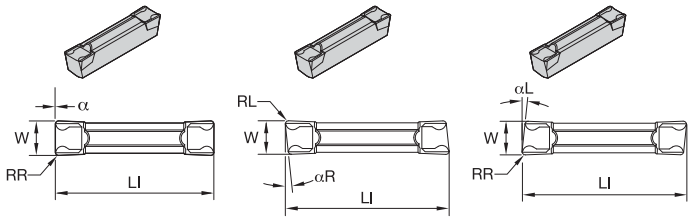
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0305M03U02B	3	3,05	.120	0,2	.008	20	.79	3,5	.138					●						●	●				
A4G0405M04U04B	4	4,05	.159	0,4	.016	20	.79	3,4	.134					●							●				
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

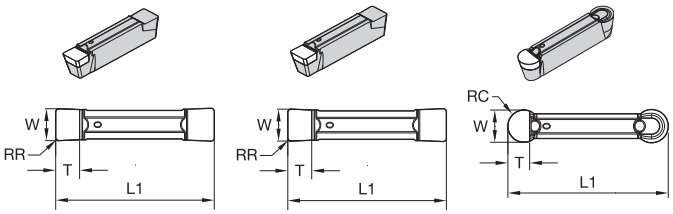
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	α	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155N00CF01	1	1,50	.059	0,2	.006	16	.61	—											●	●				
A4C0205N00CF02	2	2,05	.081	0,2	.008	20	.79	—											●	●				
A4C0255N00CF02	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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
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

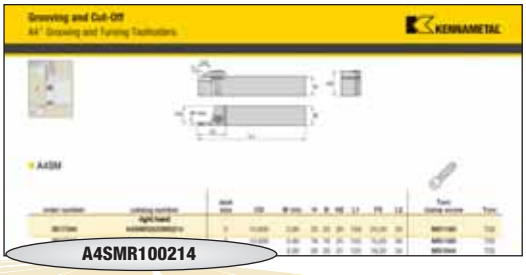
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0300M03P04S02025ST	3	3,00	.118	0,4	.016	20	.78	3,0	.118															●	●
A4G0400M04P04S02025ST	4	4,00	.157	0,4	.016	20	.78	3,3	.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

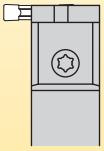
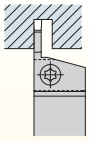
catalog number	seat size	W mm	W in	RR mm	RR in	LI mm	LI in	T mm	T in	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0300M03P00EST	3	3,00	.118	—	—	20	.78	2,2	.087															●	
A4R0400M04P00EST	4	4,00	.157	—	—	20	.78	2,9	.114															●	
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.



A4SMR100214

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 90º		 **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

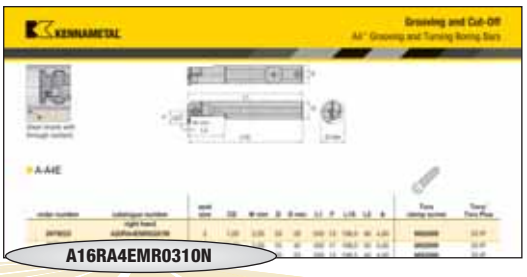
E =
No steel support for face grooving

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

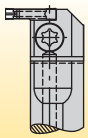
metric tool length (mm)
K = 125
M = 150
P = 170

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

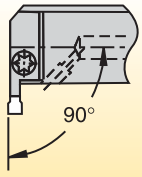


A16RA4EMR0310N

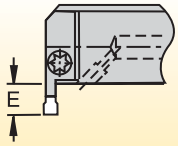
A	16	R	A4	E	M	R	03	10	N
Steel Bar with Coolant	Bar Diameter	Bar Length	A4 Groove & Turn System	Tool Style	Support Type	Hand of Tool	Insert Seat Size	Grooving Depth in mm	Tool Units



N = Inch
M = Metric

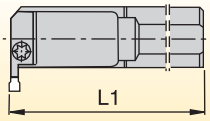


E = End mounted (90°)



conversions:

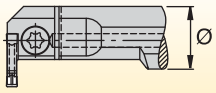
mm		inch
7mm	=	.28"
10mm	=	.39"
12mm	=	.47"
16mm	=	.63"



inch bars:
R = 8"
S = 10"
T = 12"

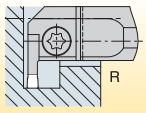
metric bars:
R = 200mm
S = 250mm
T = 300mm

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

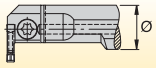


inch bars:
A two-digit number which indicates the bar diameter in 1/16" increments.

metric bars:
Bar diameter in millimeters

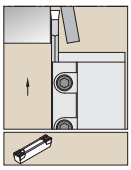


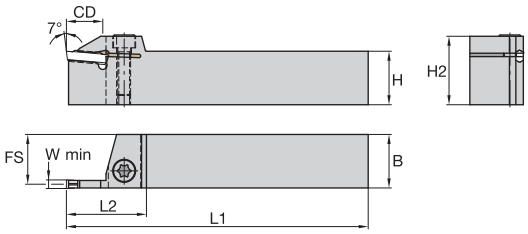
R = Right hand



L = Left hand

M = Maximum support



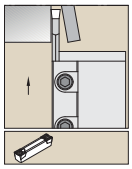


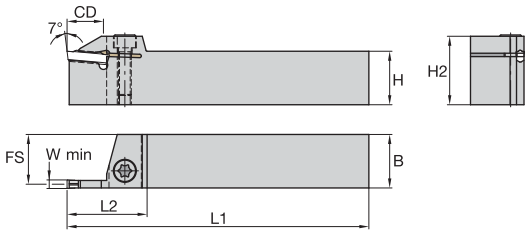
A4SM

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

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A smaller, more compact version of the internationally reowned KM™ system.

- Quick-change cutter heads reduce indexing and set-up times by 66%.
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- KM Micro square shank adapters can be installed quickly and easily in existing tool block adapters.

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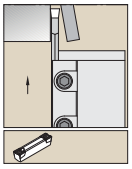
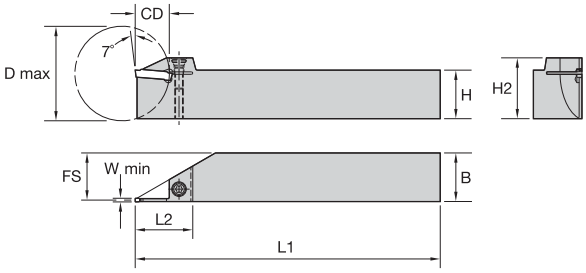
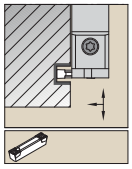
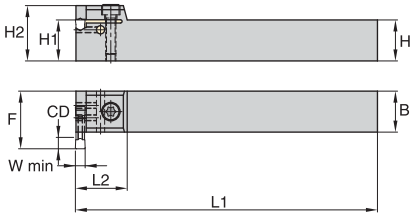


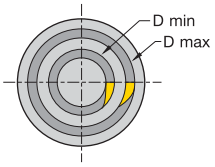


A4SC

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	**—**	**—**





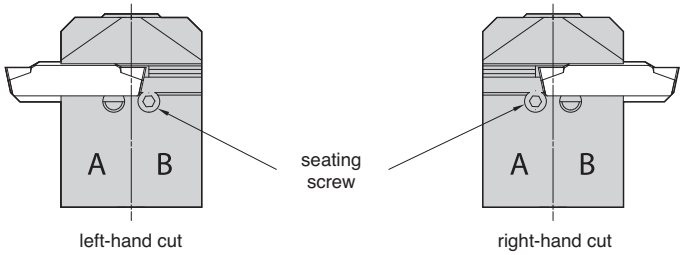


A4EN

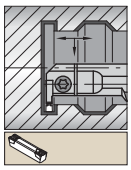
order number	catalog number	seat size	CD	W min	D min	H	H1	B	H2	L1	F	L2	clamp screw	Torx	seating screw	hex
2414138	**A4ENN120305**	3	.20	.118	2.756	.75	.75	.75	1.06	5.00	.965	.98	**MS2091**	T25	**MS2090**	1.5 mm
2414139	**A4ENN160305**	3	.20	.118	2.756	1.00	1.00	1.00	1.26	6.00	1.213	.98	**MS2091**	T25	**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.

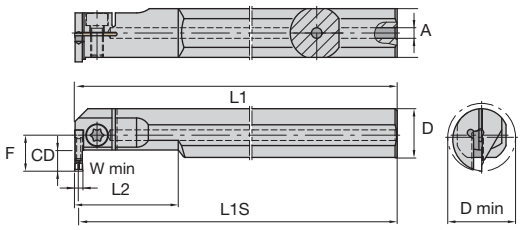
A4EN Insert Mounting



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.

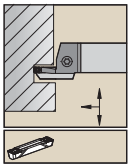


Steel shank with through coolant.

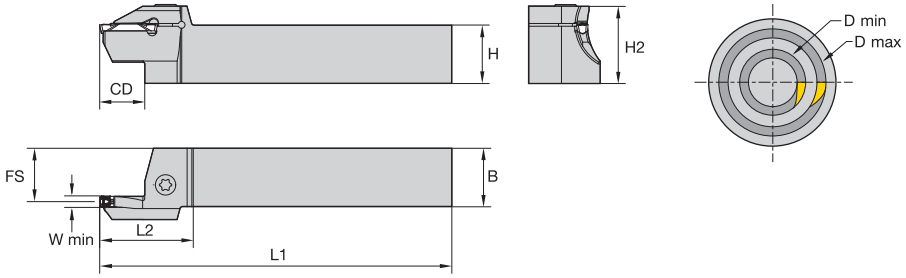


A-A4E

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

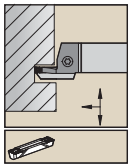


Right hand shown.

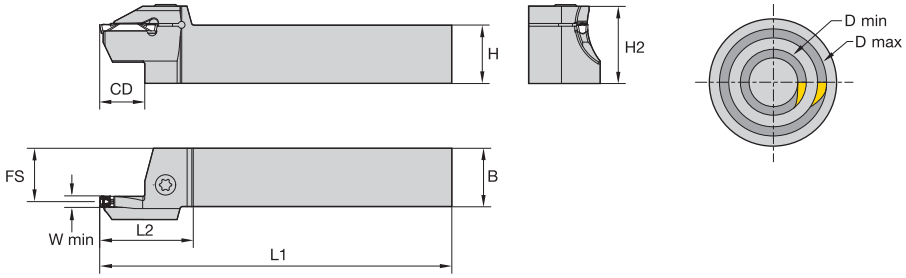


A4SB Outboard Sweep

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

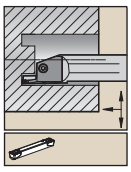


Right hand shown.

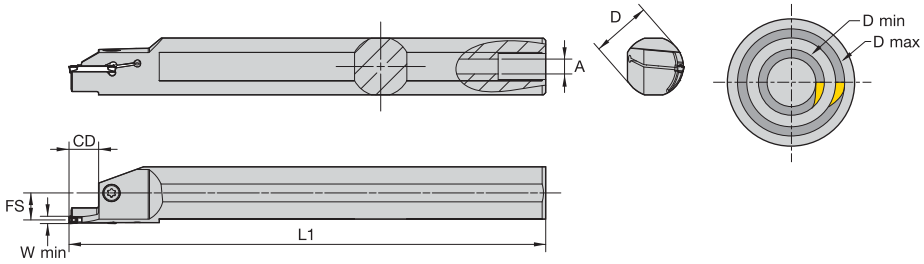


A4SB Outboard Sweep • Inch

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

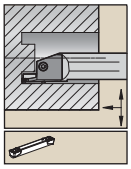


Right hand shown.

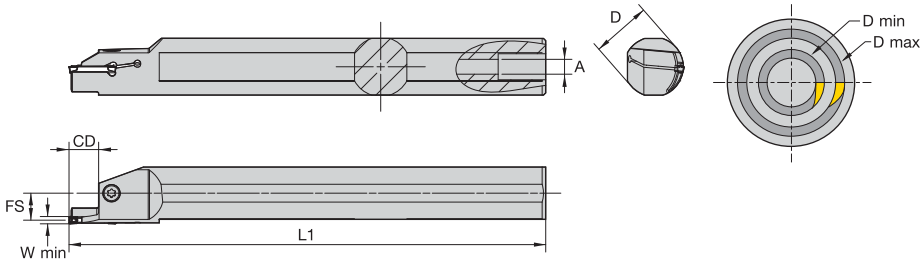


A4SS Inboard Sweep

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



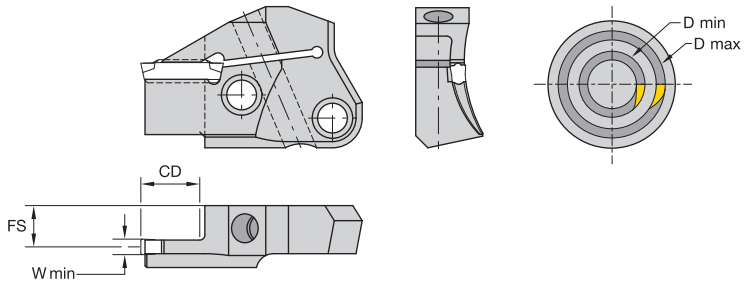
Right hand shown.



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

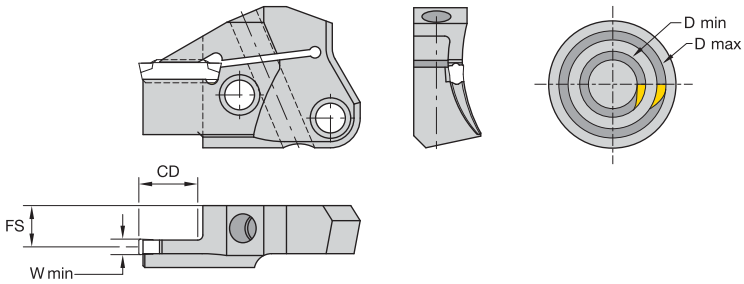
Right hand shown.



A4M-SB Outboard Sweep

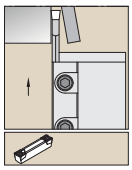
order number	catalog number	seat size	D min	D max	CD	W min	FS	cartridge size
	right hand							
3867458	A4M50R2S12B020025	2S	20	25	12	2	10,90	50
3867459	A4M50R2S12B025036	2S	25	36	12	2	10,90	50
3867457	A4M50R2S12B016020	2S	16	20	12	2	10,90	50
3867461	A4M50R3S14B025036	3S	25	36	14	3	10,49	50
3867460	A4M50R3S14B020025	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

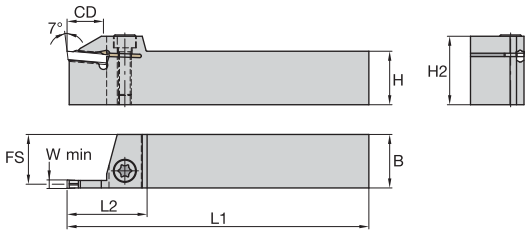
Right hand shown.



A4M-SB Outboard Sweep • Inch

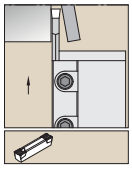
order number	catalog number	seat size	D min	D max	CD	W min	FS	cartridge size
	right hand							
3867458	**A4M50R2S12B020025**	2S	.787	.984	.47	.079	.429	50
3867459	**A4M50R2S12B025036**	2S	.984	1.417	.47	.079	.429	50
3867457	**A4M50R2S12B016020**	2S	.630	.787	.47	.079	.429	50
3867461	**A4M50R3S14B025036**	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

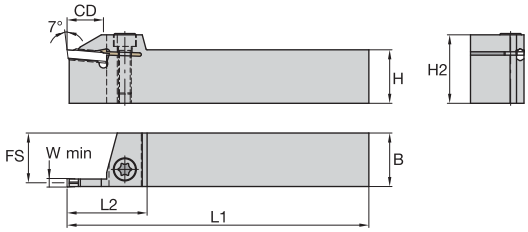




A4SM

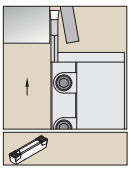
order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854265	A4SMR2020K0208	2	8	2	20	20	24	125	19	26	MS1160	T20
3854267	A4SMR2020K0308	3	8	3	20	20	27	125	19	28	MS1595	T30
3854269	A4SMR2020K0408	4	8	4	20	20	27	125	18	28	MS1595	T30
3854271	A4SMR2525M0510	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

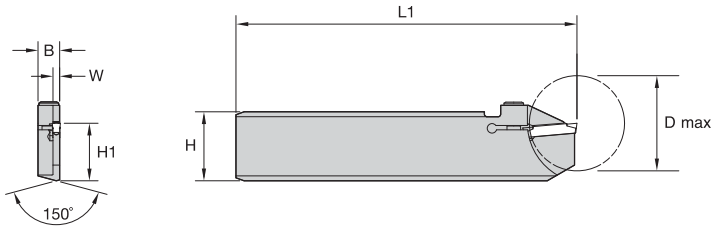




A4SM • Inch

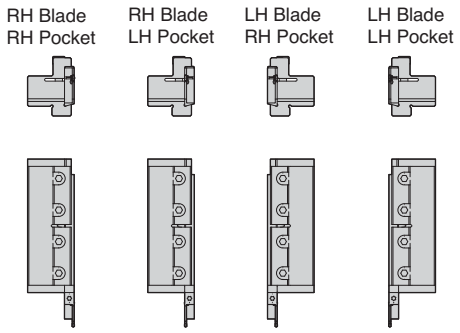
order number	catalog number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3854275	A4SMR120208	2	.32	.079	.750	.750	.91	5.00	.71	1.02	MS1160	T20
3854277	A4SMR120308	3	.32	.118	.750	.750	1.01	5.00	.69	1.10	MS1595	T30
3854279	A4SMR120408	4	.32	.158	.750	.750	1.01	5.00	.67	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

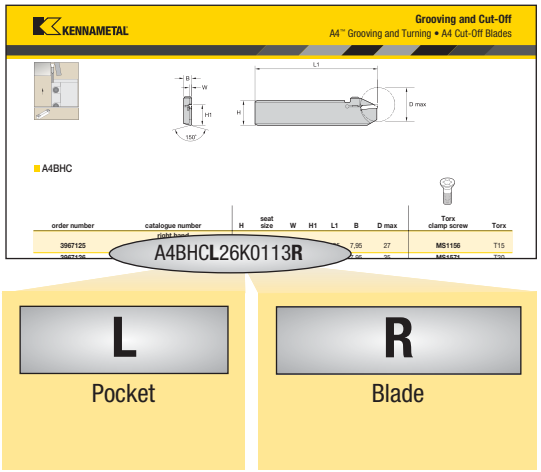


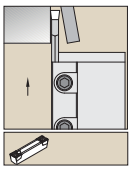


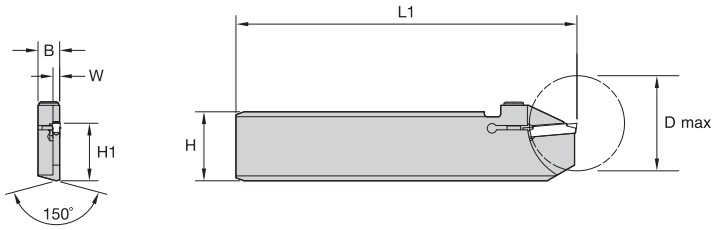
A4BHC

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



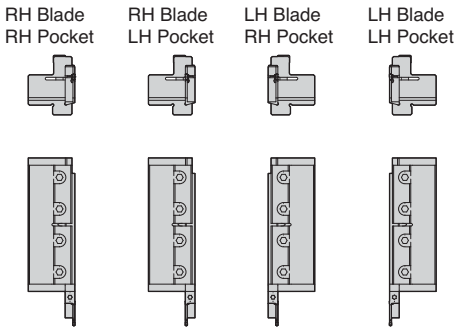






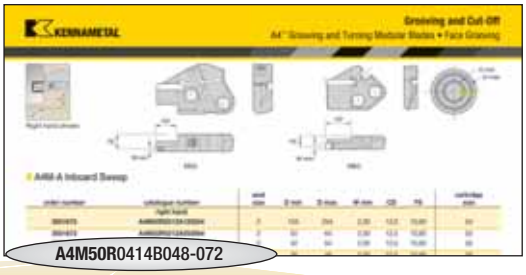
A4BHC • Inch

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



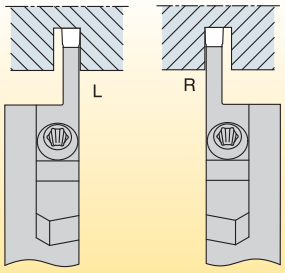
How Do Catalog Numbers Work?

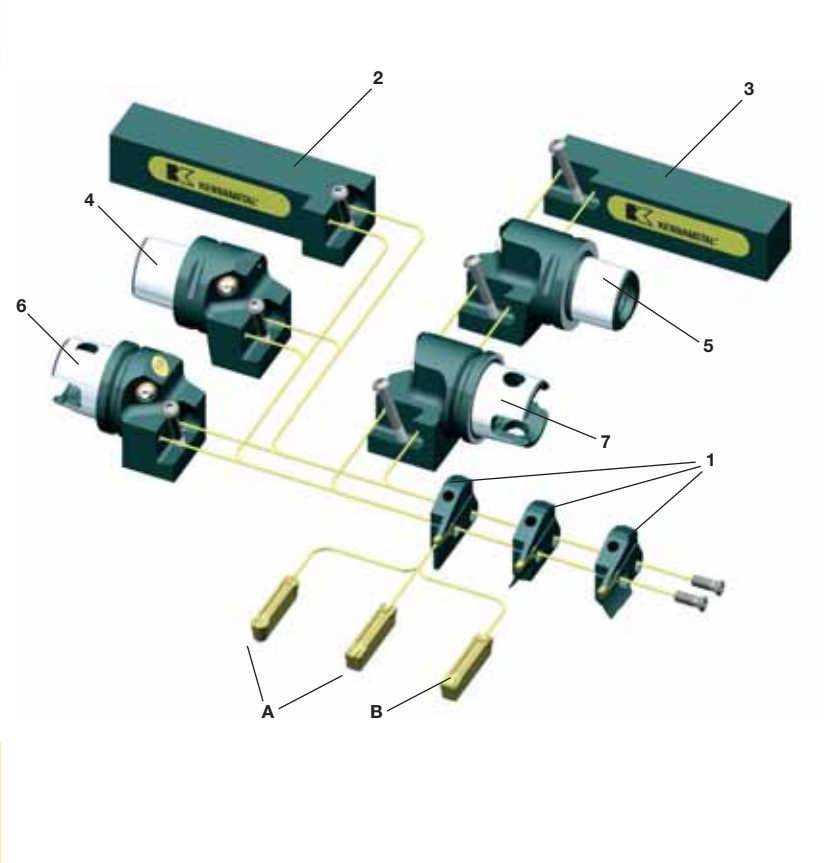
Each character in our catalog number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A4M50R0414B048-072

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.

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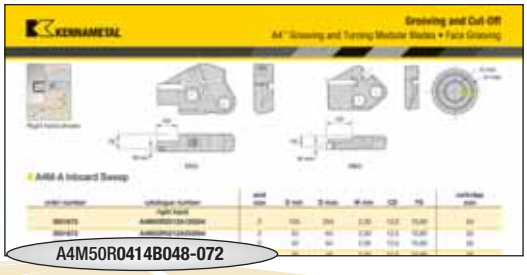


A4M50R0414B048-072

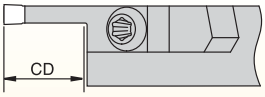
04

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

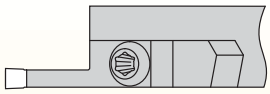


conversions:

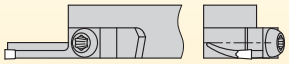
mm		inch
14mm	=	.55"
19mm	=	.75"
20mm	=	.79"
26mm	=	1.02"

B

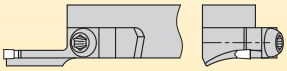
Tool Style



M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters



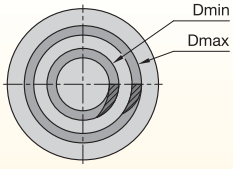
A = Inboard sweep face grooving toolholder



B = Outboard sweep face grooving toolholder

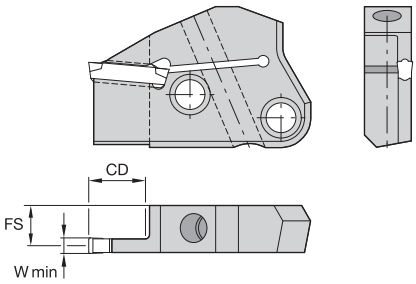
048-072

Face Grooving Diameter Range

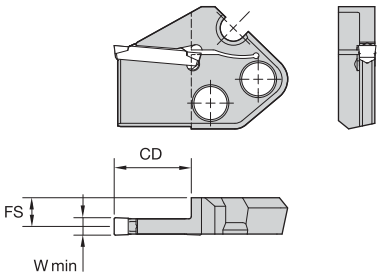


diameters are min and max for outer face groove dia. 999 = unlimited D max

Right hand shown.



M50

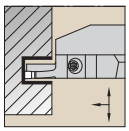


M65

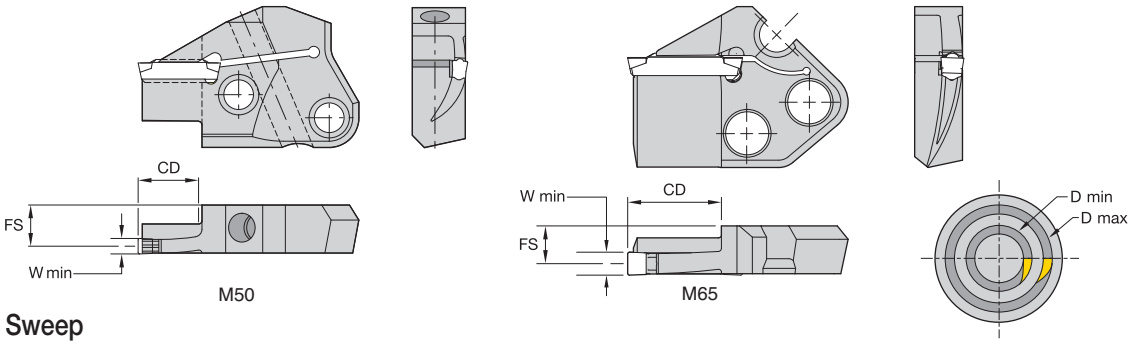
A4M-M

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.

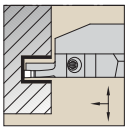


A4M-A Inboard Sweep

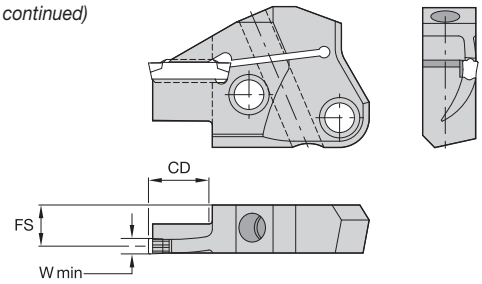
order number	catalog number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3051670	A4M50R0212A036046	2	1.417	1.811	.079	.47	.429	50
3051671	A4M50R0212A042054	2	1.654	2.126	.079	.47	.429	50
3051672	A4M50R0212A050064	2	1.969	2.520	.079	.47	.429	50
3051673	A4M50R0212A060084	2	2.362	3.307	.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)

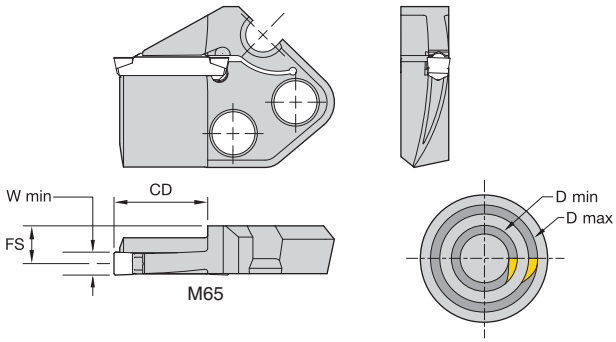
(A4M-A Inboard Sweep continued)



Right hand shown.



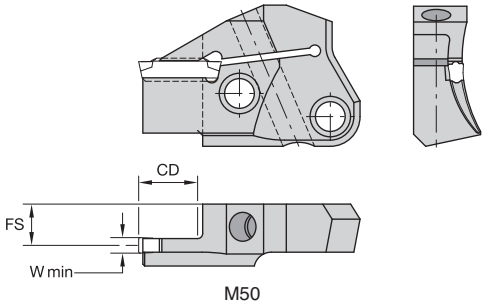
M50

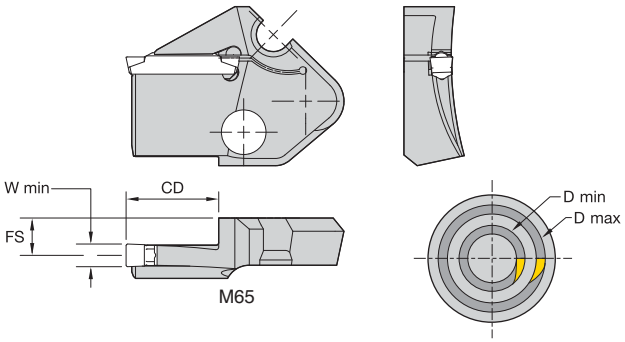


M65

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.





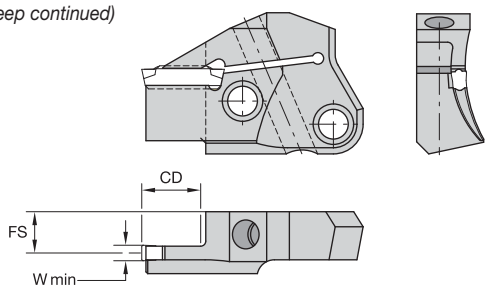
A4M-B Outboard Sweep

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

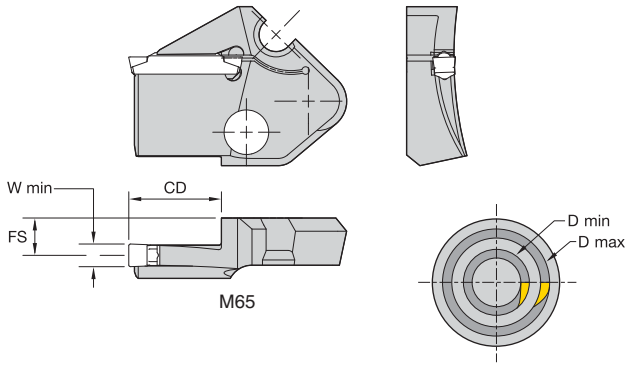
(continued)

(A4M-B Outboard Sweep continued)

Right hand shown.



M50



M65

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

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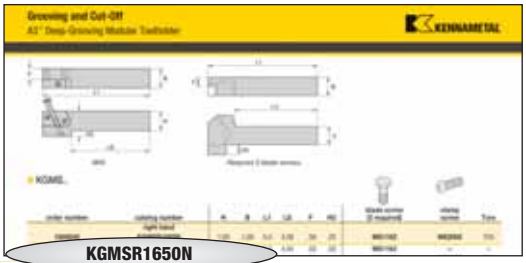
KENNAMETAL®

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

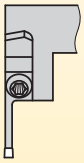
KGM	S	R	16	50	N	

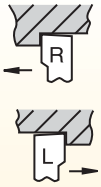
Metric

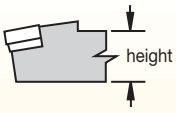
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

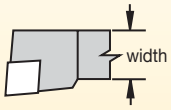
E







shank height in millimeters



shank width in millimeters

square shanks:
The number indicates the toolholder cross section in 1/16" increments.

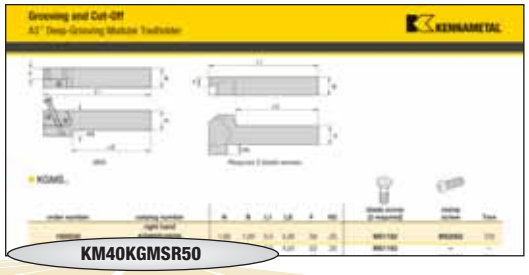
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

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.

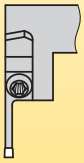


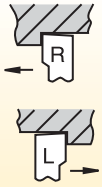
KM40KGMSR50

KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S

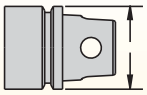
E



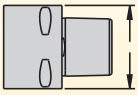


Y = Mazak® INTEGREX® Y-series machines

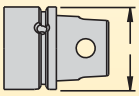
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



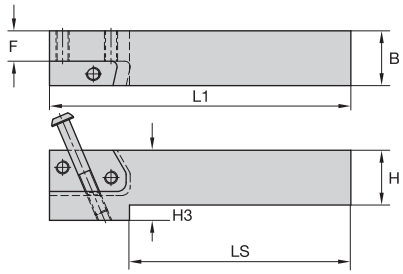
Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



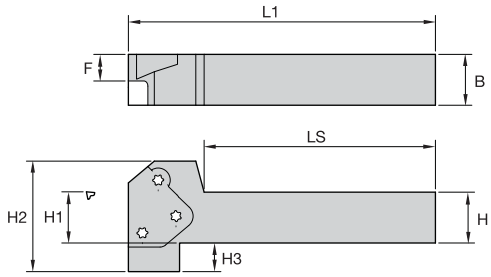
KMXMZ size
KM63XMZ™ = 63mm dia.



(KM-KGMSR...) (KM-KGMEL...)



M50
2 blade screws required.

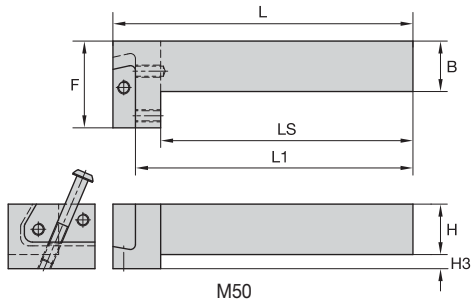


M65
3 blade screws required.

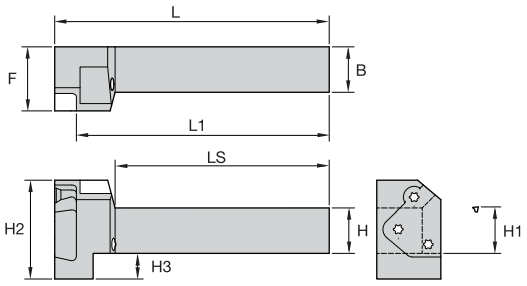
KGMS..

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.

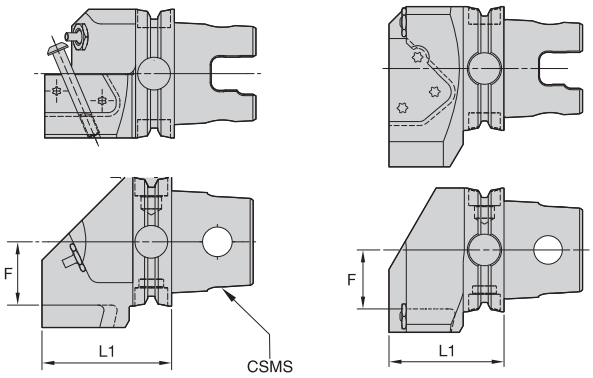


M65
3 blade screws required.

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	**—**	—

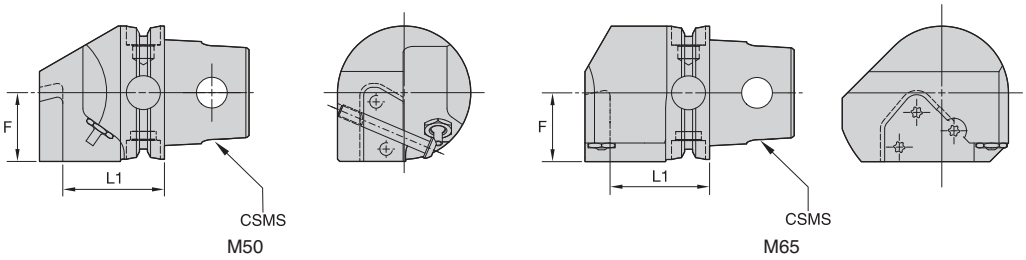
NOTE: KGMS..: Right-hand holder uses right-hand blades. KGME..: Right-hand holder uses left-hand blades. M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.) M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.) See Modular Blade Assembly Diagrams on pages D118–D119.



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.

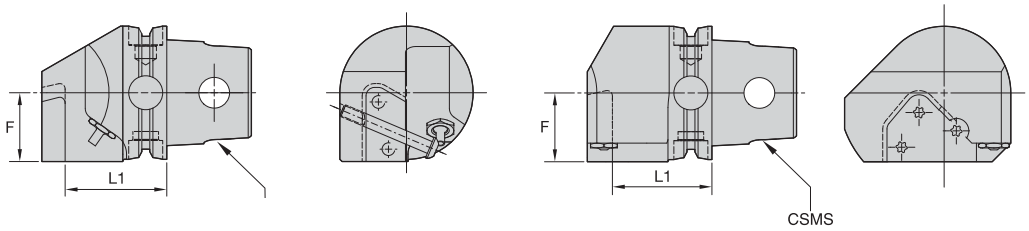


KM-KGME..

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)

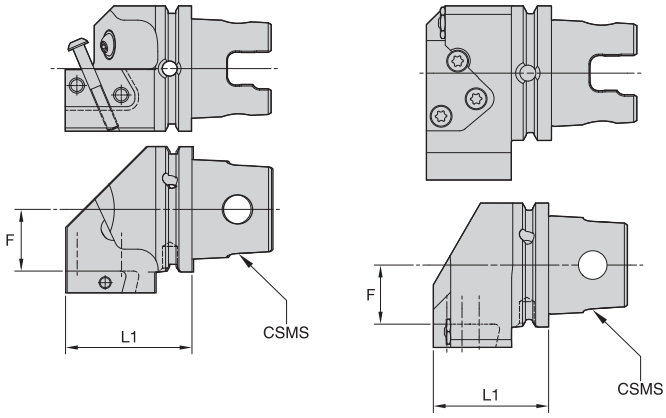
(KM-KGME.. continued)



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.

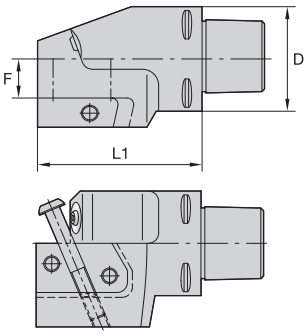


M50 M65

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	**–**	–

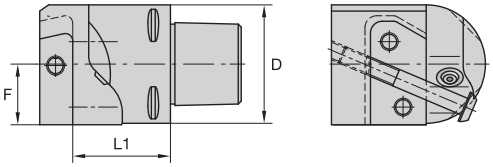
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.)
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.)
See Modular Blade Assembly Diagrams on page D118–D119.



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.



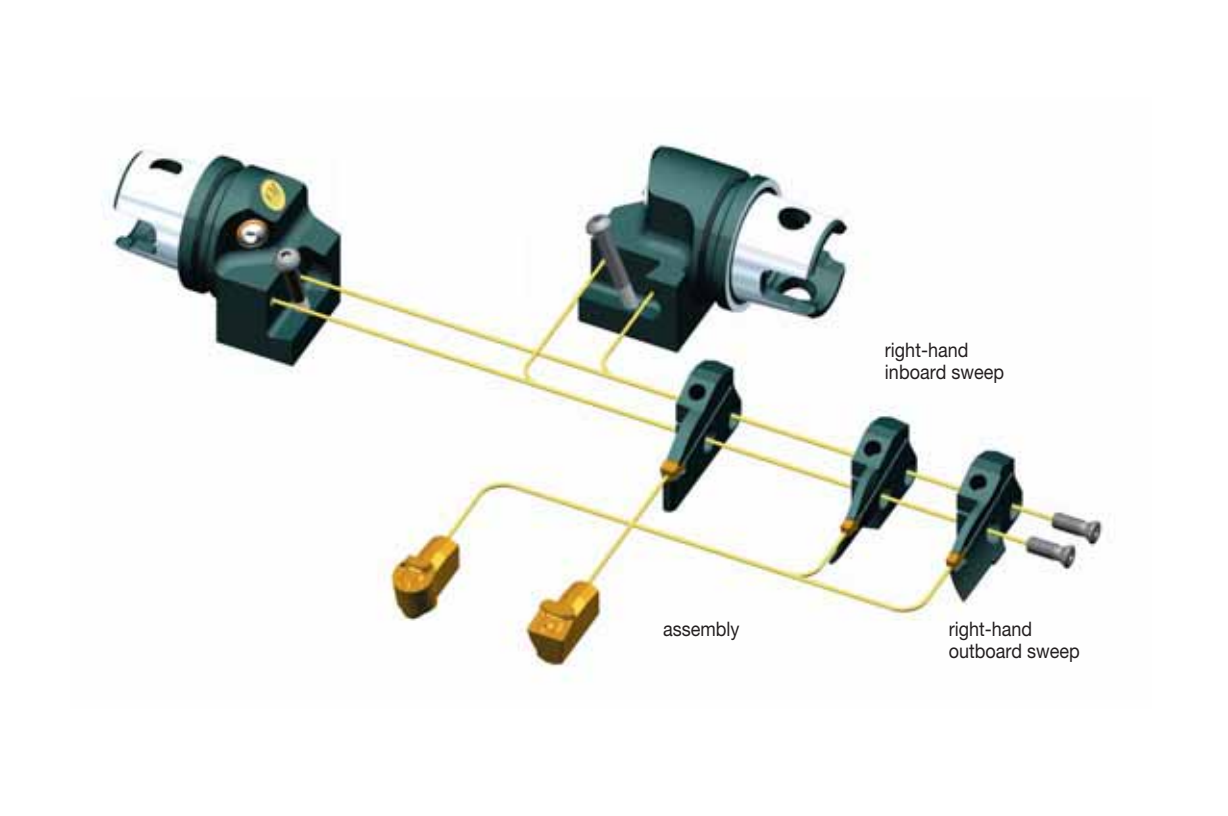
C-KGME

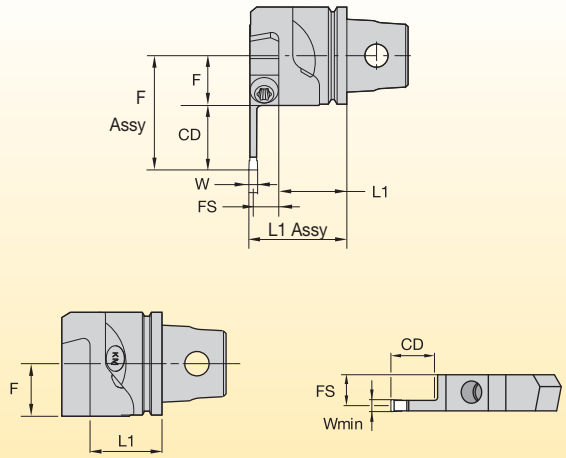
order number	catalog number	D mm	D in	L1 mm	L1 in	F mm	F in	blade screw (2 required)	Torx	clamp screw	Torx
	right hand										
1756579	**C4KGMER50**	40	1.57	33,0	1.30	21	.81	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	1.97	43,0	1.69	26	1.00	**MS1162**	T25	**MS2002**	T25
	left hand										
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.

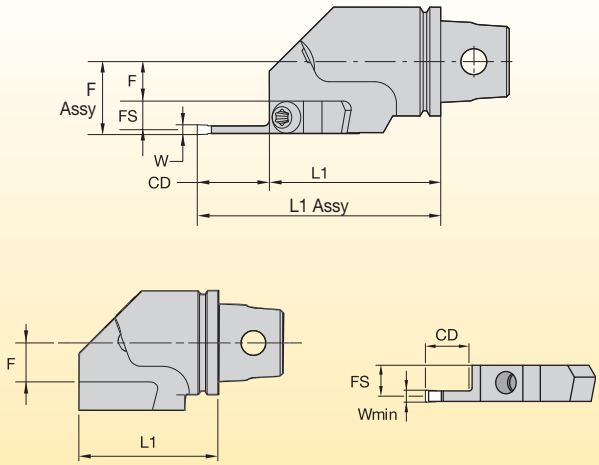
A3™ and A4™ Modular Blade Assemblies

Kennametal's A3 and A4 grooving systems are the best choice for high-productivity with outstanding application flexibility.





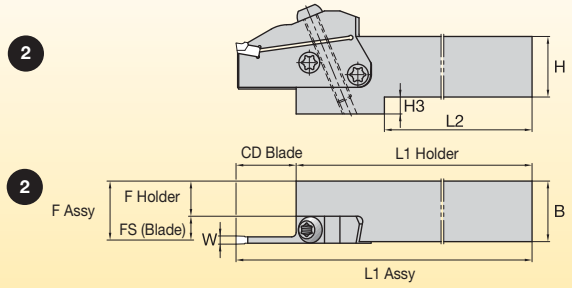
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

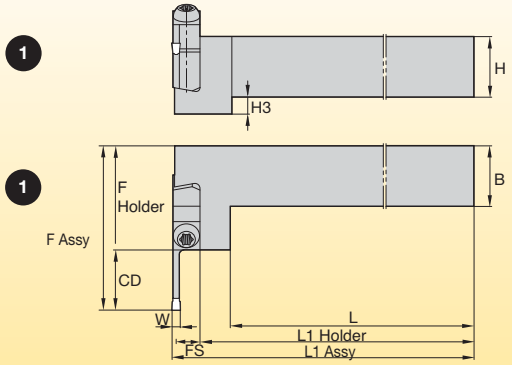
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



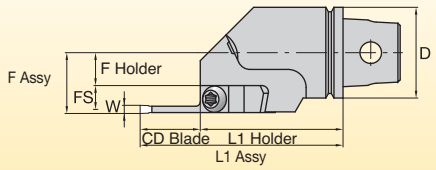
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



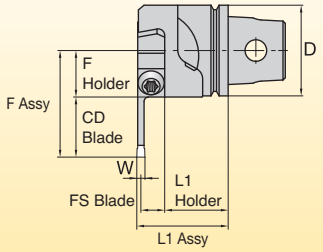
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



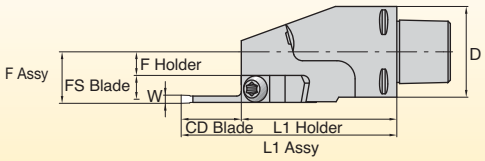
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



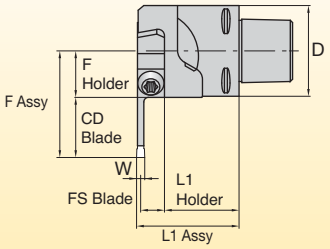
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



F Assy = F (Holder) + FS (Blade) + W2
L1 Assy = L1 (Holder) + CD (Blade)

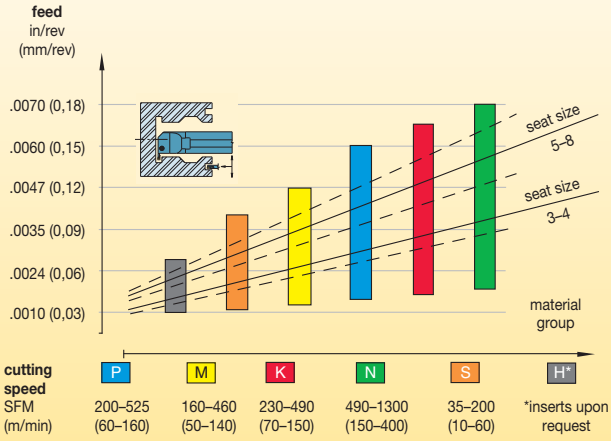
C-KGME



F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

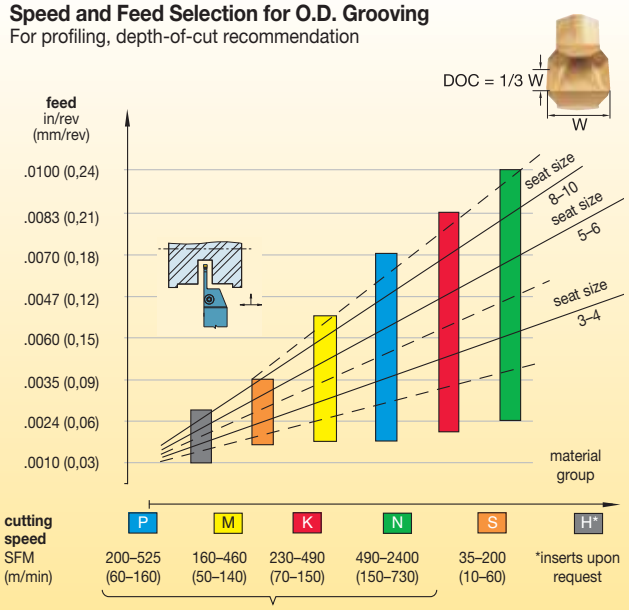
Application Guidelines

Speed and Feed Selection for I.D. and Face Grooving



Speed and Feed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

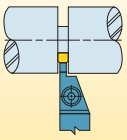


For radial grooving under stable conditions, feed can be increased by up to 50%.

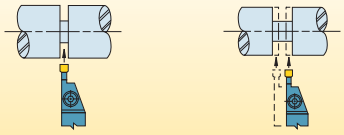
Tool Application Guidelines

- 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

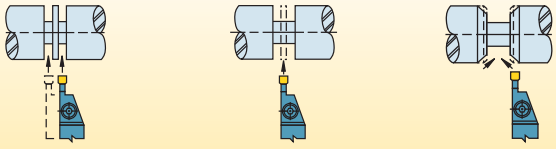


Deep Grooves Slightly Wider than the Tool



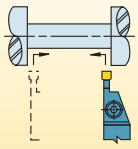
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

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.

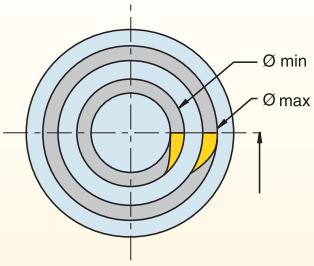
Finish Turning of the Groove/Light Profiling



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

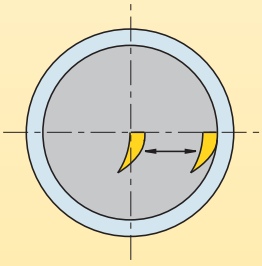
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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).

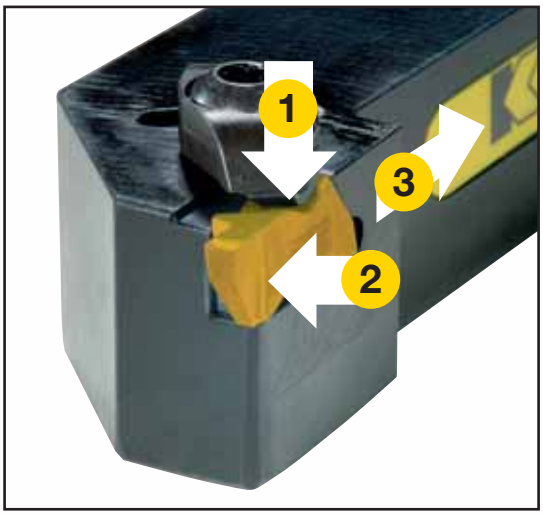
Top Notch™ Grooving Tools and Beyond™ Inserts for Your Shallow Groove and Turn Operations

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)	KD9320 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)	KD5010 250–750 (80–230)	–	–	–
general purpose (first choice for general machining)	KC9110 400–1000 (120–300)	KCU25/KC5025 160–400 (50–120)	KD9110 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)	KD5025 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.

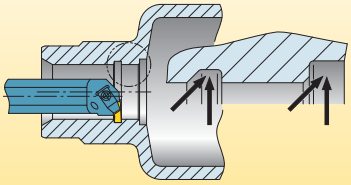
Example for Top Notch • Grooving

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.....A20QNNT0L2 (metric)
A12NEL2 (inch)
Gage insert N.2R



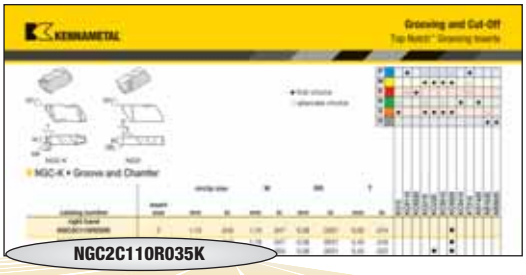
Speed: 400 SFM (120 m/min)
Feed: .006 in/rev (0,15 mm/rev)

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.



NGC2C110R035K

Metric

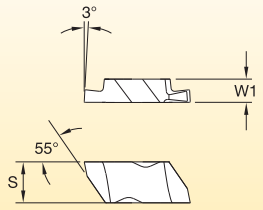
N	G	C	2	C	110	R	035	K	
Type of Insert	Insert Style	Additional Information	Insert Size	Size Identification	Groove Size**	Hand of Insert	Cutting Depth	Chipbreaker Design	Definition of Inserts
N = Top Notch 	**B** = Blank (for special forms) **F** = Face grooving **G** = Grooving **P** = Back turning **R** = Full radius **U** = Undercutting (or relieving) **V** = Poly-Vee	**D** = Deep grooving **P** = Positive **C** = Groove and chamfer		**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.

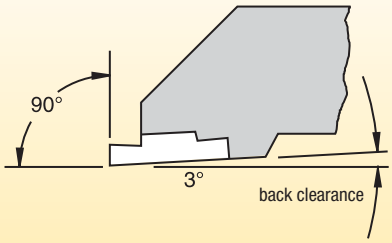
**Omit position for Top Notch NB-style blanks.

Top Notch Threading and Grooving Insert Dimensions



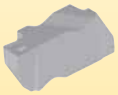
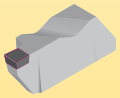
insert size	S mm	S inch	W1 mm	W1 inch
1	2,54	.100	2,54	.100
2	5,56	.219	3,81	.150
3	8,74	.344	4,95	.195
4	11,51	.453	6,48	.255
5	17,48	.688	9,65	.380
6	11,51	.453	9,73	.383
8	7,93	.312	11,13	.438

Top Notch Holder Design

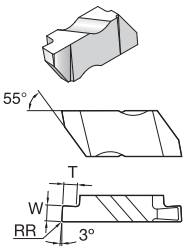


NOTE: Holders are designed to locate insert inclined to 3° to provide back clearance down open side.

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

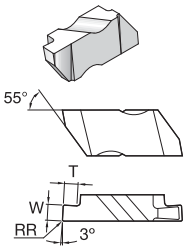
	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

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)

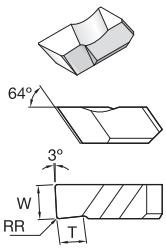


● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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
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							●					

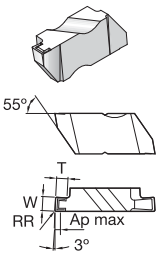
NOTE: All KD and KB grades are single-ended tipped inserts.
Right-hand insert shown; left-hand insert is mirror image.



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

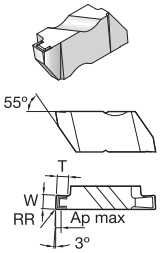
	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

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)



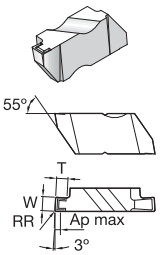
● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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)

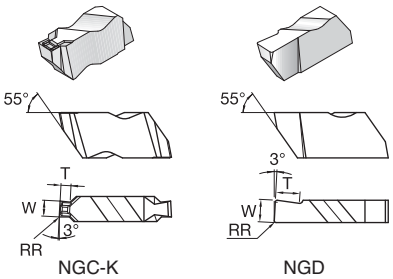


● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

NGC-K • Groove and Chamfer

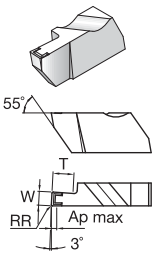
catalog number	insert size	circlip size mm	circlip size in	W mm	W in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGC2C110R035K	2	1,10	.043	1,19	.047	0,08	.0031	0,35	.014							●					
NGC2C110R040K	2	1,10	.043	1,19	.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.



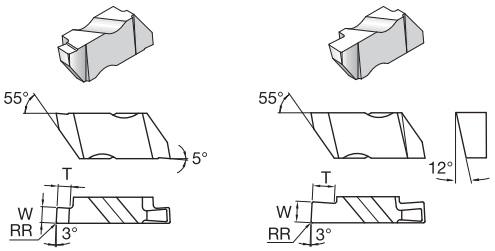
● first choice
○ alternate choice

	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

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

NGP • Grooving Positive Rake Inserts

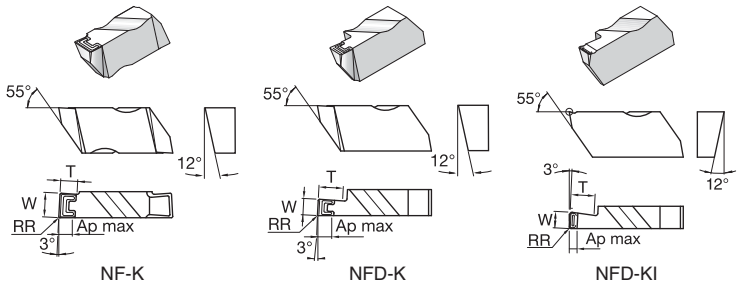
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NGP2031R	2	0,79	.031	—	—	0,09	.0035	1,27	.050				●		●		●				
NGP2M150R	2	1,50	.059	—	—	0,19	.0075	2,79	.110	●											
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.



● 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

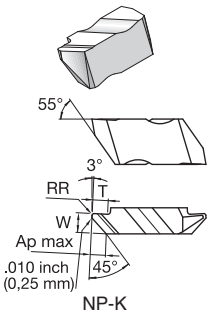
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NFD3M300RK	3	3,00	.118	1,02	.040	0,19	.0075	6,35	.250							●					
NFD3125RK	3	3,18	.125	1,02	.040	0,19	.0075	6,35	.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.

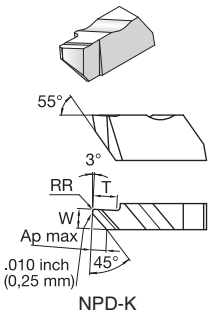
NFD-KI • Face Grooving Deep-Grooving Inserts

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.



NP-K



NPD-K

● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

NP-K • Profiling Inserts

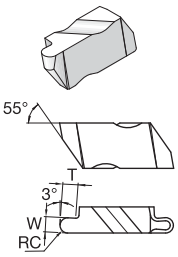
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RR mm	RR in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NP2002RK	2	3,68	.145	—	—	0,09	.0035	2,79	.110				●	●	●	●					
NP2012RK	2	3,68	.145	—	—	0,34	.0135	2,79	.110					●		●					
NP3002RK	3	4,83	.190	—	—	0,09	.0035	5,08	.200				●	●	●	●					
NP3012RK	3	4,83	.190	—	—	0,34	.0135	5,08	.200					●		●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.
Tolerance on W ± 0,13mm (± .005")

NPD-K • Profiling Deep Postive 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																					
NPD2002RK	2	3,68	.145	—	—	0,09	.0035	5,08	.200				●	●	●	●					
NPD3002RK	3	4,83	.190	—	—	0,09	.0035	6,35	.250					●		●					
NPD3012RK	3	4,83	.190	—	—	0,34	.0135	6,35	.250				●	●	●	●					

NOTE: Right-hand insert shown; left-hand insert is mirror image.
Tolerance on W ± 0,13mm (± .005").



● first choice
○ alternate choice

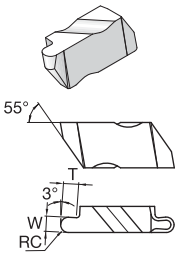
	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

NR • Full Radius 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																					
NR2M050R	2	1,00	.039	–	–	0,50	.0197	1,27	.050			●	●	●	●	●					
NR2M075R	2	1,50	.059	–	–	0,75	.0295	2,79	.110			●	●		●						
NR2031R	2	1,58	.062	–	–	0,79	.0310	2,79	.110				●	●	●	●					
NR2M100R	2	2,00	.079	–	–	1,00	.0394	2,79	.110			●	●		●	●					
NR2047R	2	2,39	.094	–	–	1,19	.0470	2,79	.110					●		●					
NR2M125R	2	2,50	.098	–	–	1,25	.0492	2,79	.110			●				●					
NR2M150R	2	3,00	.118	–	–	1,50	.0591	2,79	.110			●				●					
NR2062R	2	3,18	.125	–	–	1,59	.0625	2,79	.110				●	●	●	●					
NR2M175R	2	3,50	.138	–	–	1,75	.0689	2,79	.110			●				●					
NR3031R	3	1,58	.062	–	–	0,79	.0310	2,39	.094	●			●	●	●	●					
NR3M100R	3	2,00	.079	–	–	1,00	.0394	2,39	.094			●				●					
NR3047R	3	2,39	.094	–	–	1,19	.0470	3,81	.150	●			●	●	●	●					
NR3M125R	3	2,50	.098	–	–	1,25	.0492	3,81	.150		●	●									
NR3M150R	3	3,00	.118	–	–	1,50	.0591	3,81	.150			●				●					
NR3062R	3	3,18	.125	–	–	1,59	.0625	3,81	.150	●			●	●	●	●					
NR3M175R	3	3,50	.138	–	–	1,75	.0689	3,81	.150			●									
NR3078R	3	3,96	.156	–	–	1,98	.0780	3,81	.150	●											
NR3M200R	3	4,00	.157	–	–	2,00	.0787	3,81	.150			●				●					
NR3M225R	3	4,50	.177	–	–	2,25	.0886	3,81	.150			●				●					
NR3094R	3	4,78	.188	–	–	2,39	.0940	3,81	.150	●			●	●	●	●					
NR4M200R	4	4,00	.157	–	–	2,00	.0787	6,35	.250			●									
NR4M225R	4	4,50	.177	–	–	2,25	.0886	6,35	.250			●									
NR4094R	4	4,78	.188	–	–	2,39	.0940	6,35	.250	●											
NR4M250R	4	5,00	.197	–	–	2,50	.0984	6,35	.250			●									
NR4125R	4	6,35	.250	–	–	3,18	.1250	6,35	.250	●			●	●	●	●					

(continued)

(NR • Full Radius Inserts continued)

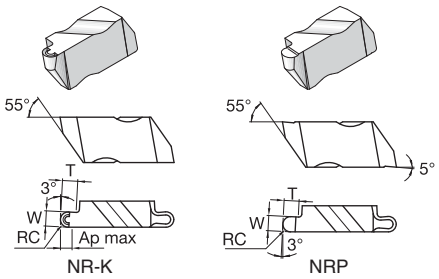


● first choice
○ alternate choice

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
P		●		○	○	○	○		●			
M				●	●	●	●		○			
K		○	●						○			
N	○			○		○		●		●		
S	●			●	●	●	●				○	
H											●	●

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
left hand																					
NR2M050L	2	1,00	.039	—	—	0,50	.0197	1,27	.050			●	●	●	●	●					
NR2M075L	2	1,50	.059	—	—	0,75	.0295	2,79	.110			●									
NR2031L	2	1,58	.062	—	—	0,79	.0310	2,79	.110				●	●	●	●					
NR2M100L	2	2,00	.079	—	—	1,00	.0394	2,79	.110			●				●					
NR2047L	2	2,39	.094	—	—	1,19	.0470	2,79	.110					●		●					
NR2M125L	2	2,50	.098	—	—	1,25	.0492	2,79	.110			●				●					
NR2M150L	2	3,00	.118	—	—	1,50	.0591	2,79	.110			●				●					
NR2062L	2	3,18	.125	—	—	1,59	.0625	2,79	.110				●	●	●	●					
NR2M175L	2	3,50	.138	—	—	1,75	.0689	2,79	.110			●			●						
NR3031L	3	1,58	.062	—	—	0,79	.0310	2,39	.094	●			●	●	●	●					
NR3M100L	3	2,00	.079	—	—	1,00	.0394	2,39	.094			●				●					
NR3047L	3	2,39	.094	—	—	1,19	.0470	3,81	.150	●			●	●	●	●					
NR3M125L	3	2,50	.098	—	—	1,25	.0492	3,81	.150			●									
NR3M150L	3	3,00	.118	—	—	1,50	.0591	3,81	.150			●	●		●	●					
NR3062L	3	3,18	.125	—	—	1,59	.0625	3,81	.150	●			●	●	●	●					
NR3M175L	3	3,50	.138	—	—	1,75	.0689	3,81	.150			●									
NR3M200L	3	4,00	.157	—	—	2,00	.0787	3,81	.150			●				●					
NR3M225L	3	4,50	.177	—	—	2,25	.0886	3,81	.150			●				●					
NR3094L	3	4,78	.188	—	—	2,39	.0940	3,81	.150	●			●	●	●	●					
NR4M200L	4	4,00	.157	—	—	2,00	.0787	6,35	.250			●									
NR4M225L	4	4,50	.177	—	—	2,25	.0886	6,35	.250			●									
NR4M250L	4	5,00	.197	—	—	2,50	.0984	6,35	.250			●									
NR4125L	4	6,35	.250	—	—	3,18	.1250	6,35	.250				●	●	●	●					

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											●	●

NR-K • Full Radius Inserts with Chip Control

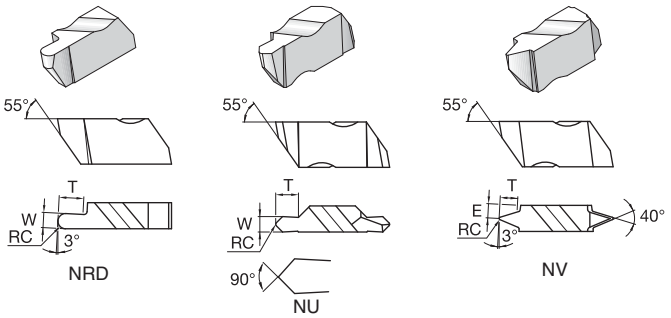
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NR3031RK	3	1,58	.062	1,98	.078	0,79	.0310	2,39	.094				●	●	●	●					
NR3047RK	3	2,39	.094	1,91	.075	1,19	.0470	3,81	.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

	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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

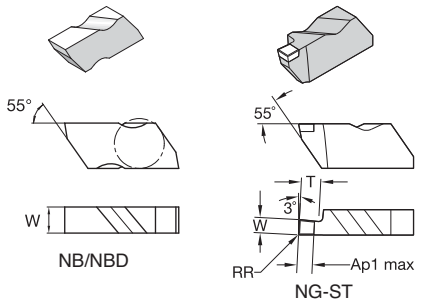
catalog number	insert size	W mm	W in	Ap max mm	Ap max in	RC mm	RC in	T mm	T in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																					
NU3094R	3	2,39	.094	—	—	0,51	.0200	3,18	.125					●		●					
NU3125R	3	3,18	.125	—	—	1,19	.0470	4,78	.188					●		●					
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	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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

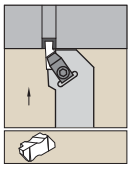
catalog number	insert size	W mm	W in	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand															
NBD2R	2	3,81	.150	●											
NBD3R	3	4,95	.195	●											
left hand															
NBD3L	3	4,95	.195	●											

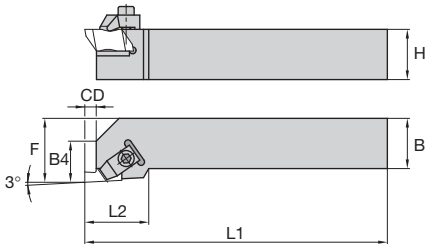
NOTE: NB and NBD blanks are designed to allow modification of the W-dimension and end form.
W-dimension is provided to indicate maximum possible width. Available only in uncoated grades.
Right-hand insert shown; left-hand insert is mirror image.

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	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
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.



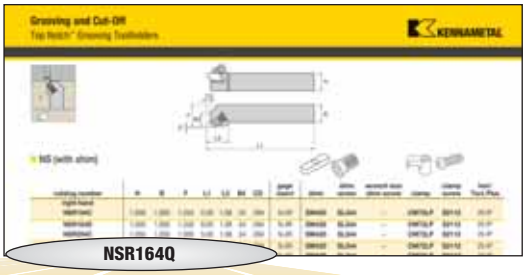


NS


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

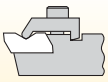
How Do Catalog Numbers Work?

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.

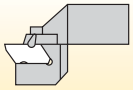


NSR164Q

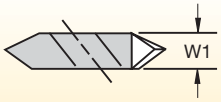
N	S	R		16	4	D
Insert Holding Method	Insert Mounting Location	Hand of Tool	Drop Head	Shank Size	Insert Size	Qualified Surface and Length



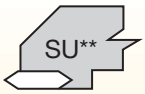
N = Top Notch*



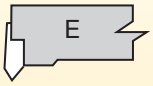
DH = Drop Head



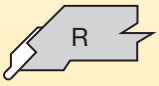
insert size inch	W1 inch	W1 mm
2	.150	3,81
3	.195	4,95
4	.255	6,98
5	.380	9,65
6	.383	9,73
8	.438	11,13



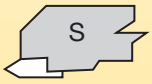
SU = Side mount utility**



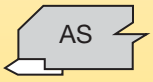
E = End



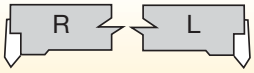
R = Undercut



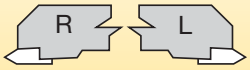
S = Side mount, offset



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.

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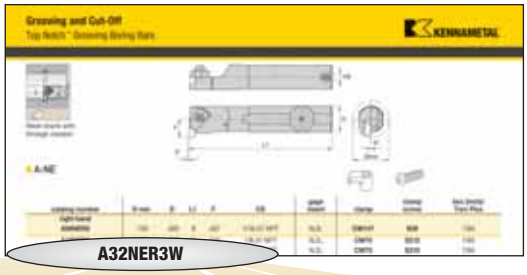
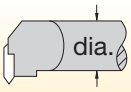
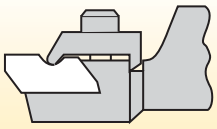


A32NER3W

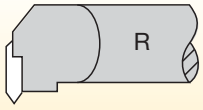
A	32	N	E	R	3	
Bar Type	Bar Diameter	Insert Holding Method	Insert Location	Hand of Bar	Insert Size	Additional Information



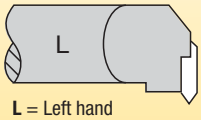
bar diameter in millimeters



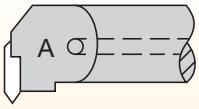
N* = Top Notch



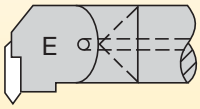
R = Right hand



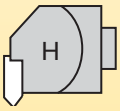
L = Left hand



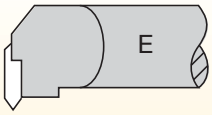
A = Steel with coolant



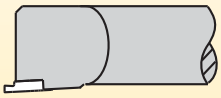
E = Carbide with coolant



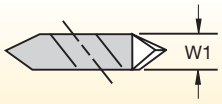
H = Interchangeable head



E = End mount

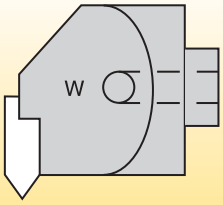


S = Straight mount

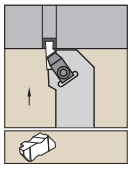


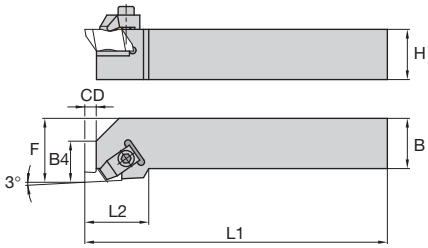
inch number	T mm	T in
1	3,54	.100
2	3,81	.150
3	5,35	.195
4	6,40	.255
5	9,65	.380
6	9,73	.383
8	11,13	.438

through-coolant interchangeable head

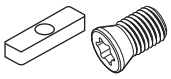


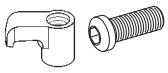
*Kennematal standard only.



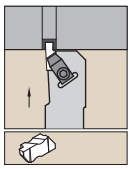


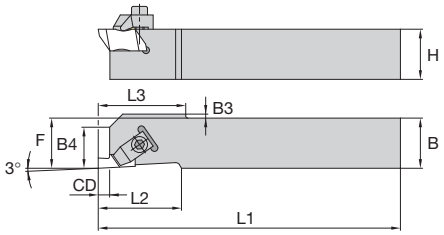
NS (with shim)





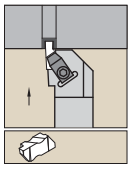
catalog number	H	B	F	L1	L2	B4	CD	gage insert	shim	shim screw	wrench size shim screw	clamp	clamp screw	hex/ Torx Plus
right hand														
NSR164C	1.000	1.000	1.250	5.00	1.38	.54	.294	N.4R	**SM420**	**SL344**	—	**CM72LP**	**S2112**	25 IP
NSR164D	1.000	1.000	1.250	6.00	1.38	.54	.294	N.4R	**SM420**	**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

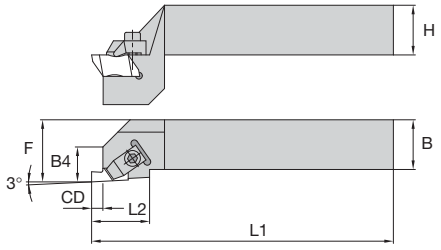




NAS

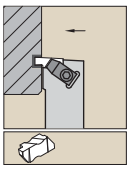
catalog number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex/ Torx Plus
right hand													
NASR062D	.375	.375	.375	6.00	.75	.35	.138	.070	.88	N.2R	CM182	S310	7/64
NASR082D	.500	.500	.500	6.00	.75	.35	.138	—	—	N.2R	CM182	S310	7/64
NASR102B	.625	.625	.625	4.50	.75	.35	.138	—	—	N.2R	CM74	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

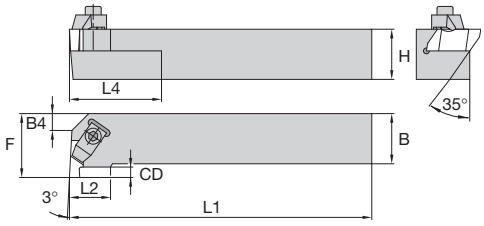




NS-DH

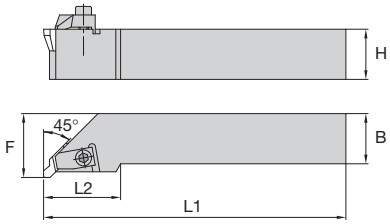
catalog number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex/ Torx Plus	wrench size jack screw
right hand												
NSRDH122B	.750	.750	1.000	4.50	.75	.40	.138	N.2R	CM74	S310	7/64	1/8
NSRDH162C	1.000	1.000	1.250	5.00	.75	.40	.138	N.2R	CM74	S310	7/64	1/8
NSRDH123A	.750	.750	1.250	4.00	1.25	.58	.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





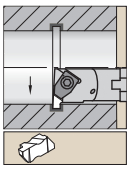
NE

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

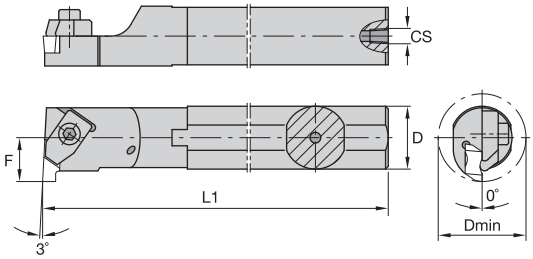


NR


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



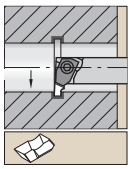
Steel shank with through coolant.



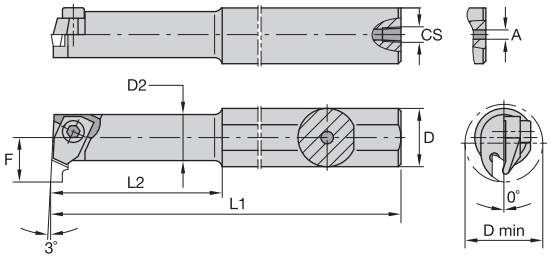
A-NE

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

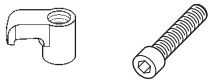
NOTE: Minimum bore capability varies with depth of groove. See page D160 for details.



Necked steel shank
with through coolant.

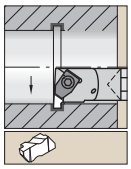


A-NE -1

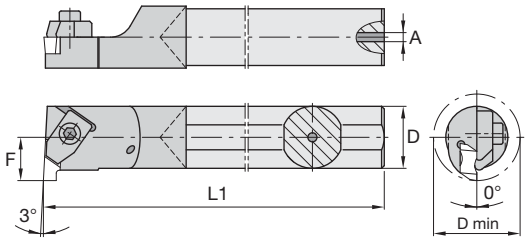


catalog number	D min	D	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand											
A06NER1	.440	.375	6.000	1	.26	.125	—	N.1L	**CM109**	**S304**	5/64
A08NER1	.440	.500	8.000	1	.26	—	1/16-27 NPT	N.1L	**CM109**	**S304**	5/64
A10NER1	.800	.625	10.000	—	.41	—	1/8-27 NPT	N.1L	**CM109**	**S304**	5/64

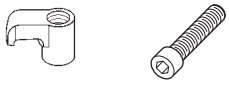
NOTE: Minimum bore capability varies with depth of groove. See page D156 for details.



Carbide shank
with through coolant.

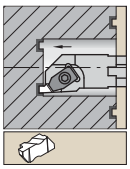


E-NE

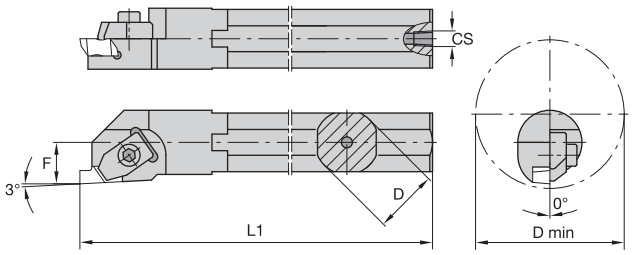


catalog number	D min	D	L1	F	A	gage insert	clamp	clamp screw	hex (inch)/ Torx Plus
right hand									
E08NER2	.730	.500	8.0000	.437	.19	N.2L	**CM147**	**S39**	7/64
E10NER2	1.000	.625	10.0000	.500	.22	N.2L	**CM75**	**S310**	7/64
E12NER2	1.125	.750	10.0000	.562	.28	N.2L	**CM75**	**S310**	7/64
E16NER3	1.375	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.



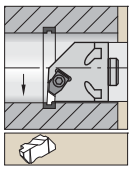
Steel shank with through coolant.

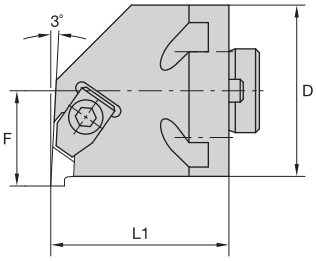


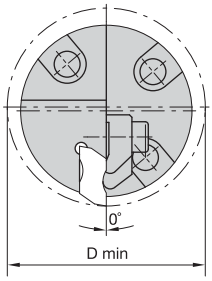
A-NS


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.



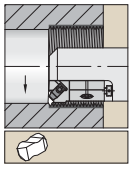


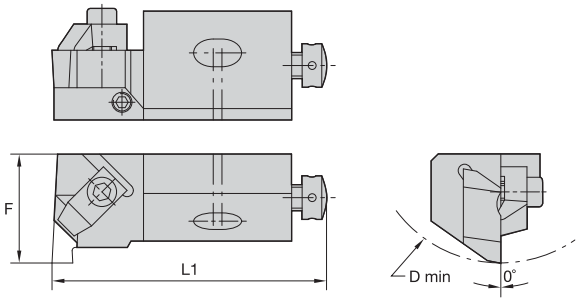


H-NE

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.

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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.

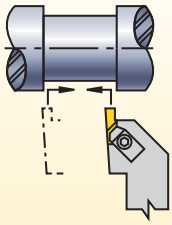
Groove Limits (Maximum Internal Groove Depth vs. Minimum Bore Diameter)

	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.

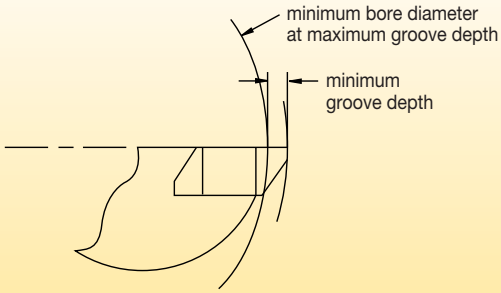
Finish Turning the Groove

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



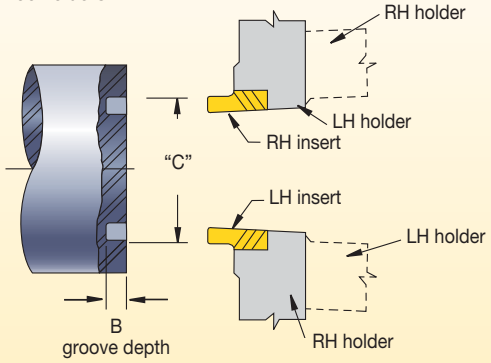
NOTE: Internal grooving depth limits are a function of bar clearance versus bore diameters.

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

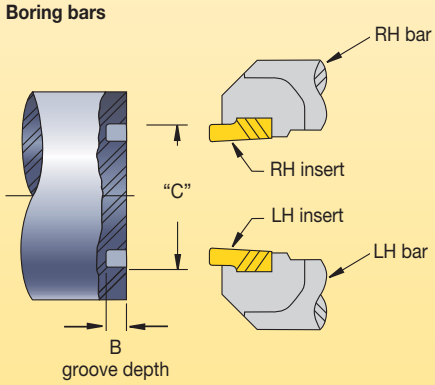
Toolholders



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

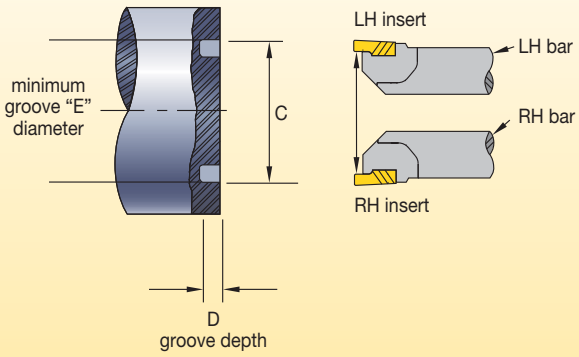


Machining Guidelines for Face Grooving Operations • Internal

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

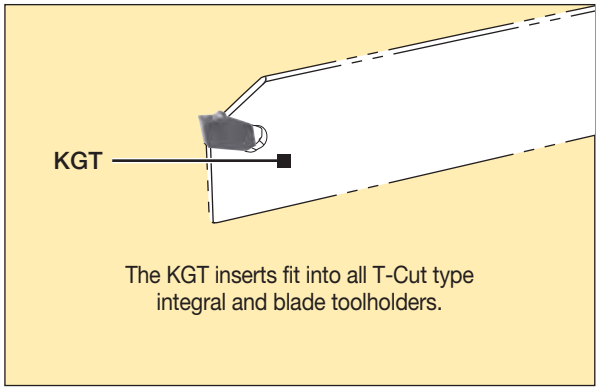
Primary Application

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

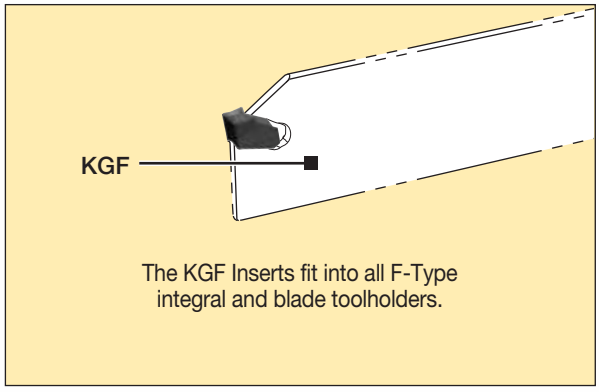
- KGT inserts are T-Type with no stopper. The KGT inserts replace single-end cutting inserts.



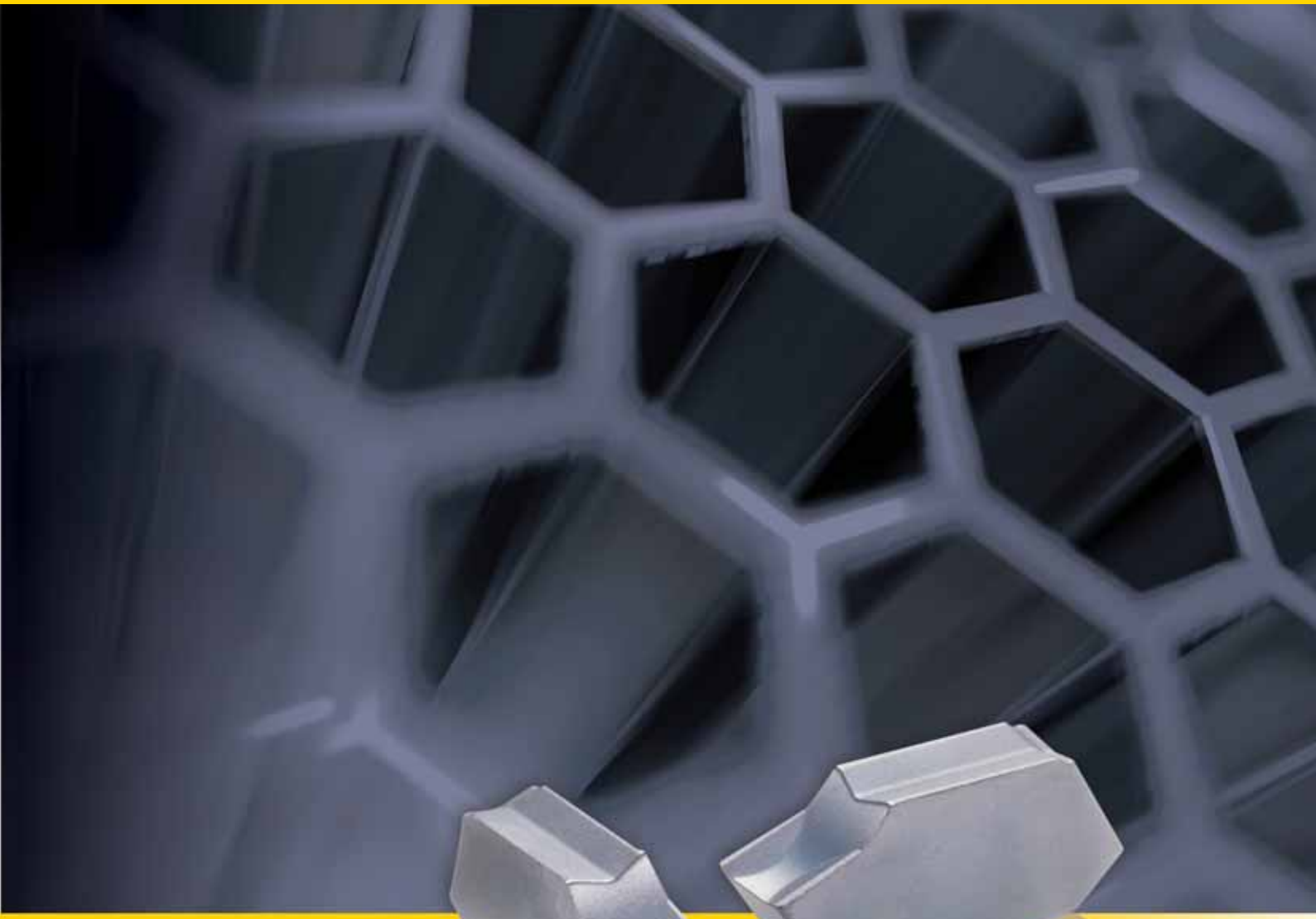
The KGT inserts fit into all T-Cut type integral and blade toolholders.

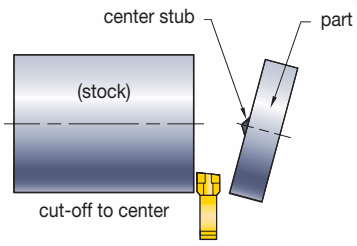
KGF Inserts

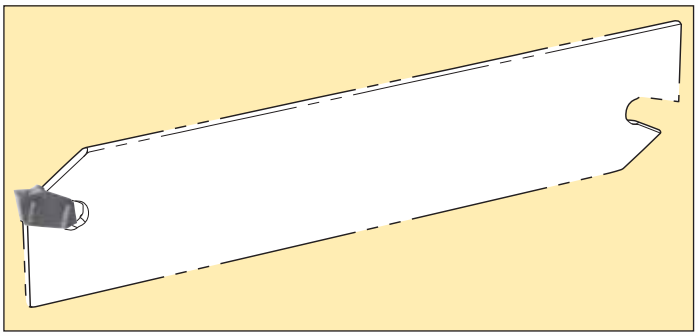
- Single-side insert for cut-off applications. This insert has a hard stop that seats insert securely into the pocket.

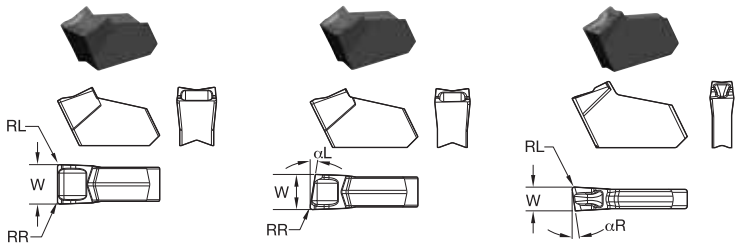


The KGF Inserts fit into all F-Type integral and blade toolholders.




center stub
part
(stock)
cut-off to center





KGF KGF-L KGF-R

● first choice
○ alternate choice

	KC5025
P	
M	○
K	
N	
S	○
H	

KGF

catalog number	W mm	W in	RL mm	RL 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.

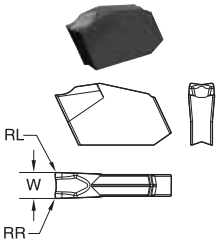
KGF-L

catalog number	W mm	W in	αL	RR mm	RR in	
KGFL38D	3,00	.118	8	0,25	.010	●
KGFL48D	4,09	.161	8	0,28	.011	●

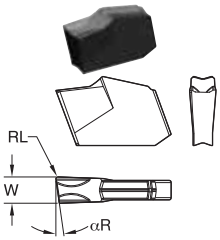
NOTE: RR = RL on neutral inserts.

KGF-R

catalog number	W mm	W in	αR	RL mm	RL 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

catalog number	W mm	W in	RL mm	RL 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

catalog number	W mm	W in	αR	RL mm	RL 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	●