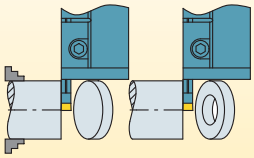
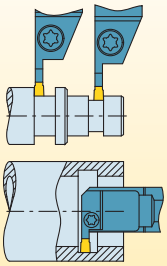
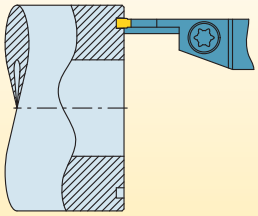
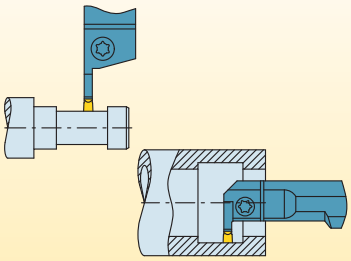
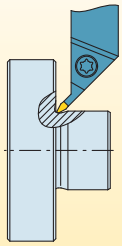
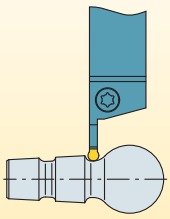
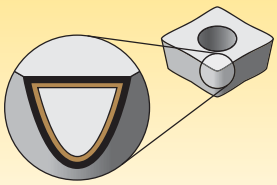
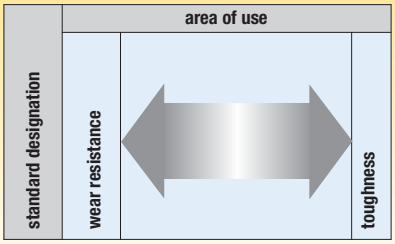
Grooving and Cut-Off

	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 0,8–9,5mm. • Cutting depths from 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 11,5mm minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • Standard inserts: 54–330mm depending on size. • NF/NFD face grooving inserts: 24–57mm. • All have unlimited maximum diameter. **Cutting Width Range** • Standard inserts: 0,8–9,5mm. • NF/NFD face grooving inserts: 2–6,35mm. **Cutting Depth Range** • Standard inserts: 1,27–12,7mm. • NF/NFD face grooving inserts: 3,8–6,35mm.
A4™ Grooving and Turning	**Cut-Off Capabilities** • Cut-off widths from 1,5–4,05mm. • Satisfies extreme demands for rigidity and dimensional accuracy. • Integral screw-clamping toolholders with 17mm maximum cutting depth available. • Economical double-edge inserts.	**Inserts** • Cutting widths from 2–10,05mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 14–26mm. **I.D. Application** • Boring bars with 25mm minimum bore diameter. • Cutting widths from 2–6,35mm.	**Minimum Face Groove Diameter Capabilities** • 16mm minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from 2–10,05mm. **Cutting Depth Range** • Cutting depths from 12mm–24mm.
A3™ Deep Grooving generally recommended for cutting depth/width ratios of more than 1,5		**Inserts** • Cutting widths from 2,36–10,05mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 10–32mm. **I.D. Application** • Boring bars with 32mm minimum bore diameter.	**Minimum Face Groove Diameter Capabilities** • 25mm minimum diameter. • Unlimited maximum diameter. **Cutting Width Range** • Cutting widths from 3–6,35mm. **Cutting Depth Range** • Cutting depths from 10–32mm.
A2™ Cut-Off	**Cut-Off Capabilities** • Cut-off widths from 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.		

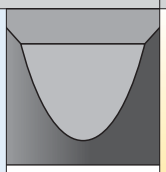
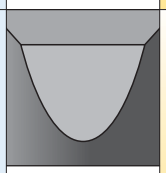
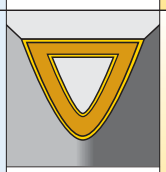
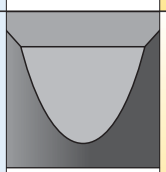
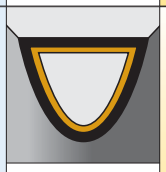
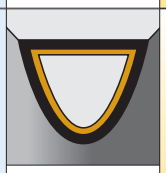
	Grooving and Turning	Undercutting	Profiling
Application			
Top Notch™ Grooving generally recommended for cutting depth/width ratios of 1,5 or less		**Top Notch Undercutting Capabilities** • Undercutting insert widths from 2,4–4mm. • Economical double-ended inserts.	**Recommended for Moderate to Heavy Stock Removal at Shallow Profile Depths** **Full Radius Inserts** • Cutting widths from 1,57–6,35mm. • Cutting depths from 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 2–10,05mm. • Double-ended, precision ground, and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM™ heads are available. • Cutting depths from 14–26mm. **I.D. Application** • Boring bars with 25mm minimum bore diameter. • Cutting widths from 2–6,35mm.		**Recommended for Heavy Stock Removal** **Full Radius Inserts** • Cutting widths from 2–10,05mm. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 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 2,36–10mm. • Precision ground and moulded inserts — all available with chip control. **O.D. Application** • Integral shank toolholders and modular KM heads are available. • Cutting depths from 10–32mm. **I.D. Application** • Boring bars with 32mm minimum bore diameter.	**Full Radius Undercutting** • Full radius inserts with cutting widths from 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 3–8mm. • 32mm maximum cutting depth. • Integral shank toolholders and modular KM heads are available. • 35° V-form inserts are also available.
A2™ Cut-Off			

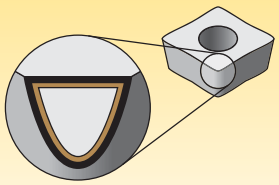


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

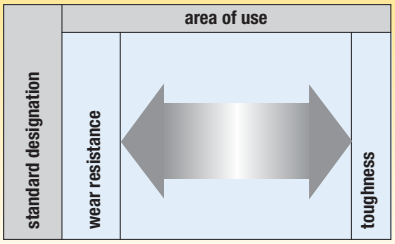


Grade

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								
		K								
		N								
		S								
K313  C3–C4	**Composition:** A hard, low binder content, unalloyed WC/Co fine-grain grade. **Application:** Exceptional edge wear resistance combined with very high strength for machining titanium, cast irons, austenitic stainless steels, non-ferrous metals, non-metals, and most high-temp alloys. Superior thermal deformation and depth-of-cut notch resistance. The grain structure is well controlled for minimal pits and flaws, which contributes to long, reliable service.									
		M								
		K								
		N								
		S								
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								
		M								
		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 unfavourable conditions.									
		N								
		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								
		M								
		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 minimises microchipping and improves coating adhesion to the substrate for long tool life.									
		P								
		M								
		K								

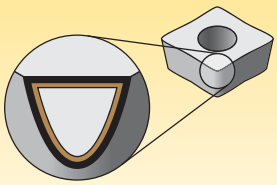


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

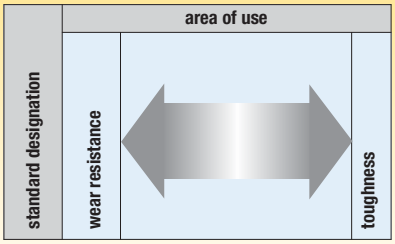


Grade

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 utilises 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								

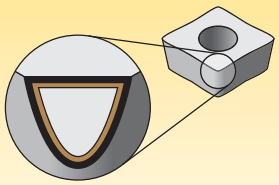


Reduce cycle times. High speed and feed capability. Long tool life. New multilayer coating provides better wear resistance.

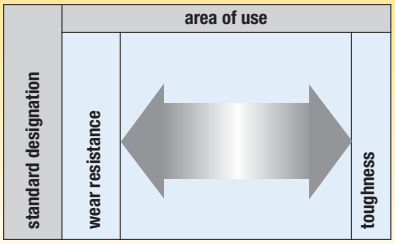


Grade

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) aluminium, aluminium 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; moulded inserts have a light hone.									
KC9110	C3, C7	**Composition:** Specially engineered, cobalt-enriched carbide grade with thick K-MTCVD-TiCN coating layer, an Al_2O_3 layer of controlled grain size, and outer layers of TiCN and TiN for maximum abrasion and wear resistance for high-speed machining. **Application:** An excellent finishing to medium machining grade for a variety of workpiece materials including most steels, ferritic and martensitic stainless steels, and cast irons. A balanced combination of deformation resistance and edge toughness. The smooth coating resists built-up edge and microchipping. For rougher cutting, use the KC9125 grade.									
KC9125	C2–C3, C6–C7	**Composition:** A tough cobalt-enriched carbide grade with a newly designed multilayer K-MTCVD $TiCNAl_2O_3$-TiCN-TiN coating with superior interlayer adhesion. **Application:** General-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance along with excellent bulk toughness and insert edge strength. Coating layers offer wear resistance over a wide range of machining conditions and reduce frictional heat, minimise microchipping, and improve workpiece surface finishes. Performs well in moderately heavy roughing to semi-finishing cuts. Use the KC9110 grade for finishing cuts.									
KC9320	C3–C4	**Composition:** A proprietary specially toughened MTCVD-TICN and Al_2O_3 coating over a wear-resistant substrate. **Application:** KC9320 is specifically engineered to maximise 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 maximise productivity wherever strength and reliability are needed.									
KY3500	C2	**Composition:** Pure silicon nitride grade. **Application:** Maximum toughness; used at high feed rates for rough machining of grey cast iron, including machining through interruptions.									
KD1400	C4	**Composition:** An ultra-fine-grain polycrystalline diamond (PCD) tip brazed onto a carbide substrate. **Application:** Designed for general-purpose turning of primarily non-ferrous materials. It can be applied over a wide range of continuous to interrupted cuts where superior surface finish is needed. Use on low to medium silicon-content aluminum alloys, non-metallics, copper, and brass- and zinc-based alloys. The ultra-fine-grain diamond particle size enables superior surface finishes while ensuring the best mechanical shock resistance of any PCD cutting tool.									



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



Grade

Coating		Grade Description	05	10	15	20	25	30	35	40	45
KD1405	C4	**Composition:** A pure CVD deposited diamond sheet tool directly brazed to a carbide substrate. **Application:** The KD1405 grade is Kennametal's and the industry's most abrasion-resistant tool material for non-ferrous and non-metallic materials. The KD1405 grade inserts are not as tough as the KD1400 and KD1425 grades but can withstand moderate interruptions when turning and traditional face milling operations.	N	N							
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 grey cast iron, chilled irons, high-chrome alloyed steels, and sintered powdered metals. The tipped PCBN insert is available in a wide range of insert styles including positive rake geometries that are ideally suited for boring applications.	K	K	K						
			S		S	S					
			H				H	H	H		
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, carburised and nitrided irons, and some hard coatings.	H	H	H	H	H	H			

A2™ Cut-Off • High-Performance Tools to Maximise 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.

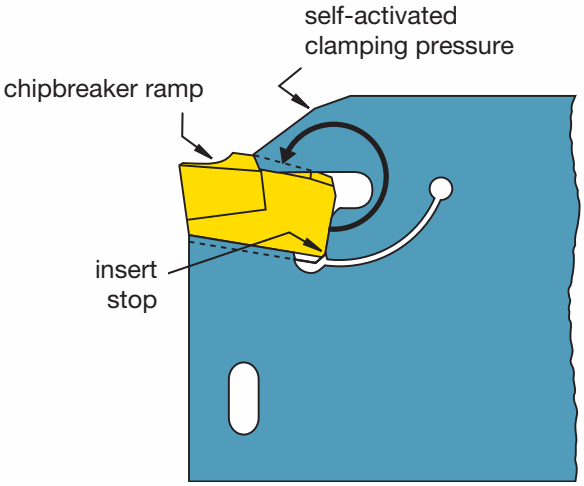
Features and Benefits

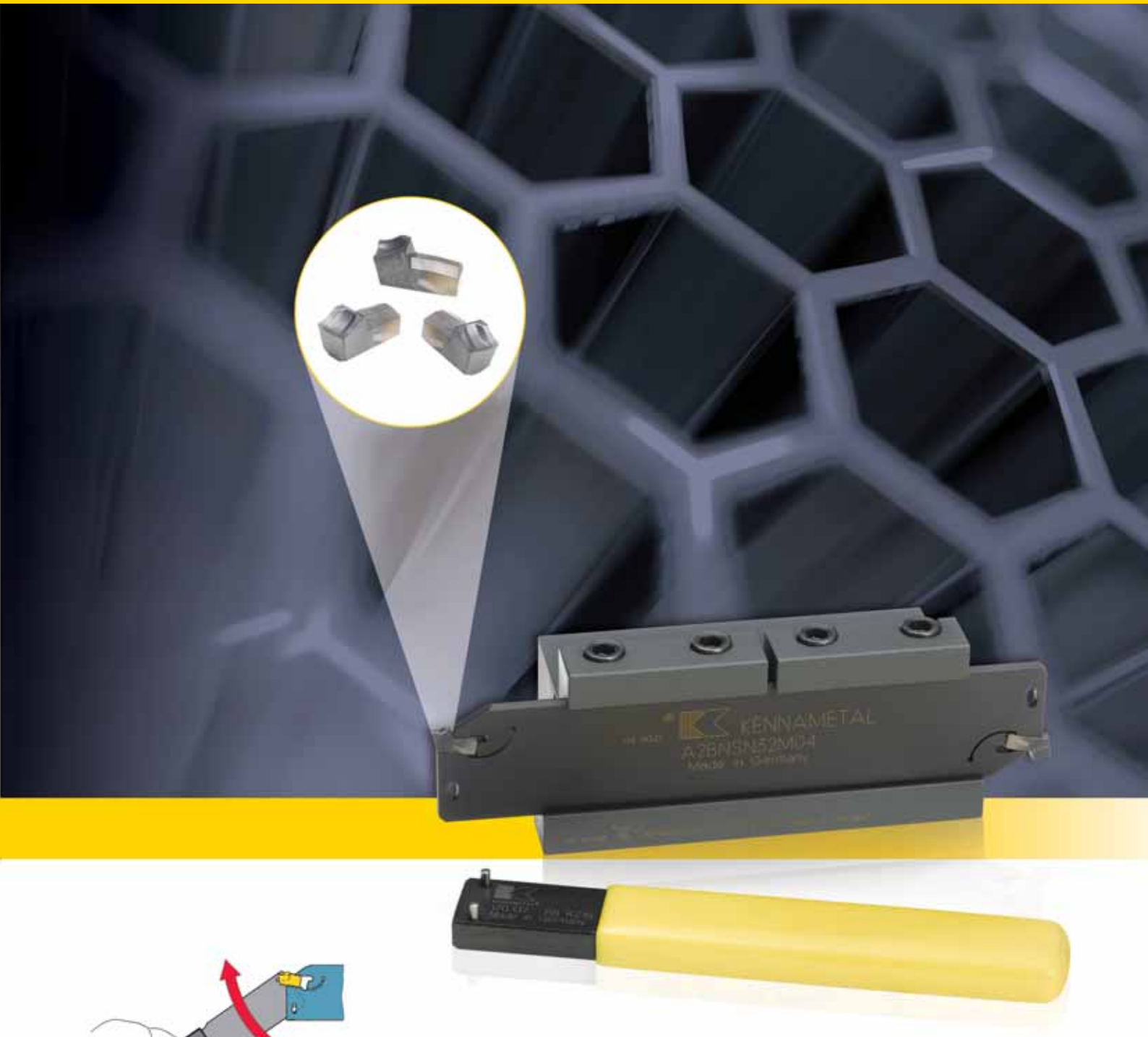
Innovative A2 Insert Design

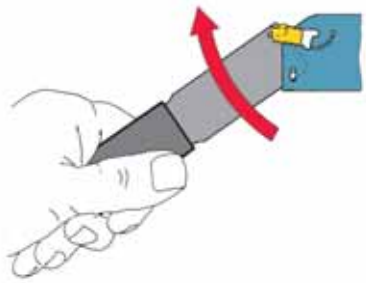
- V-prisms on both top and bottom enable higher clamping force to prevent insert movement, even when cutting at high-feed rates.
- The cutting edge has a molded-in chipbreaker ramp to direct chips away from the blade, extending blade life.
- Positive rake cutting action combined with Kennametal's high-performance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

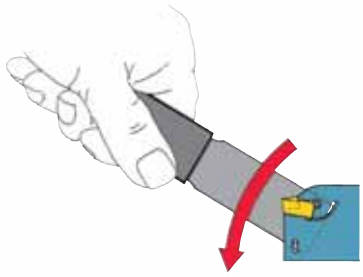
A2™ Insert Stop Design

- 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.





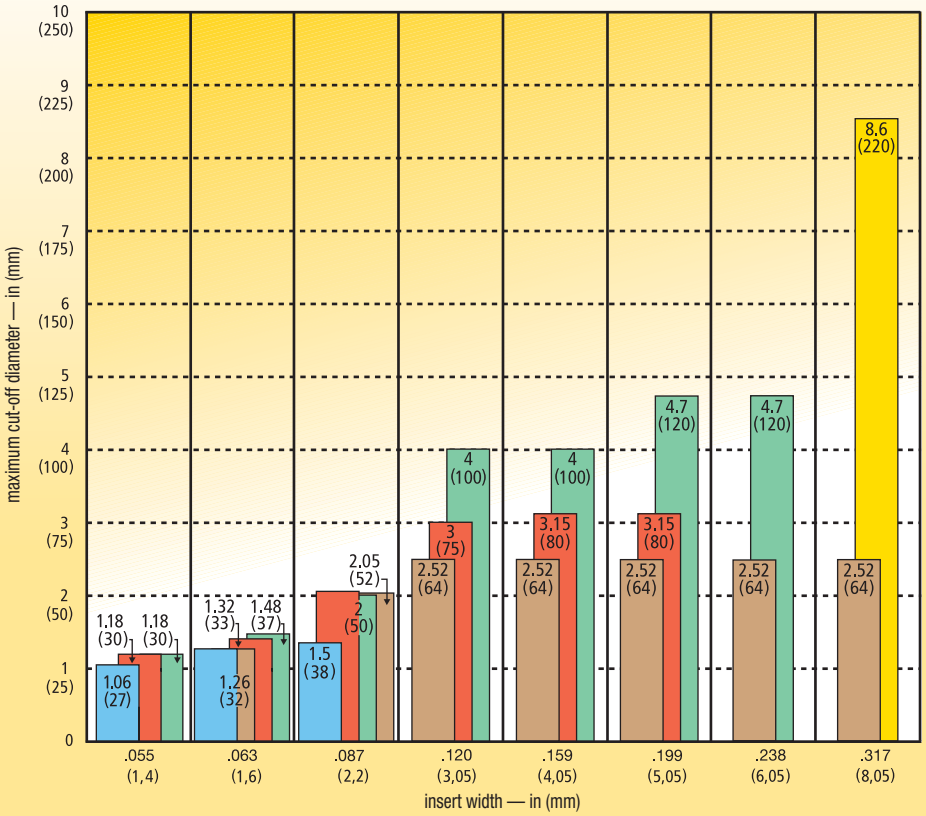




Quick and Easy Insert Indexing

- A convenient indexing wrench is available to minimise 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

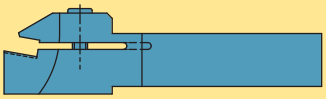
What you need to know:

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

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

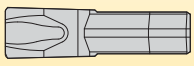
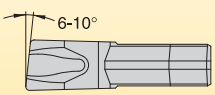
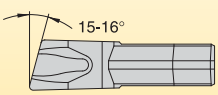
- To maximise rigidity, select the largest possible blade height or an integral shank toolholder.
- Diameters shown are for cut-off to centre. Maximum cut-off depth to a through-hole depth is one half of the diameter.
- To determine depth capability for cut-off to a through-hole on integral shank or reinforced blades, please refer to listing for that tool in this catalogue.

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 centre stub considerations.
- Cut-off to centre or through hole.

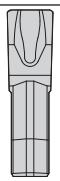
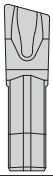
	neutral (0°)	**right/left 6–10°**	**right/left 15–16°**
insert type			
recommended application	• For cutting off solid workpieces. • Centre stub will form on cut-off part. • Eliminates lateral deflection. • Best for deep cut-off depths.	• For cutting off solid workpieces with reduced formation of centre 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 centre 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 moulded cutting edge for medium feeds. • Stabilised straight cutting edge.	• Cut-off insert with precision moulded cutting edge for higher feed rates. • Curved cutting edge.

Chipbreaker Style and Feed Rates • mm/rev

insert type	P	M	K	N	S	H
	N-CR 0,08–0,3	N-CF 0,05–0,12	N-CM 0,05–0,2	N-CF 0,05–0,18	N-CF 0,04–0,10	CBN available upon request
	N-CF 0,05–0,15	—	—	—	—	—
	N-CL 0,05–0,15	N-CL 0,05–0,12	—	N-CL 0,05–0,18	N-CL 0,04–0,10	—
	R/L-CR 0,05–0,12	R/L-CF 0,04–0,08	R/L-CM 0,05–0,12	R/L-CF 0,04–0,10	R/L-CF 0,04–0,08	CBN available upon request
	R/L-CF 0,04–0,08	—	—	—	—	—
	R/L-CL 0,04–0,08	R/L-CL 0,04–0,08	—	R/L-CL 0,04–0,10	R/L-CL 0,04–0,08	—

Step 4 • Select grade and speed

Recommendations for Grade and Speed Selection • m/min

machining condition		workpiece material					
		P	M	K	N	S	H
Beyond™	high-performance, optimum conditions, higher speeds	KT315 395–625	KT315 230–560	KCU25/KC5025 265–560	KT315 600–1300	KCU25/KC5025 100–325	—
	first choice for general machining conditions	KCU25/KC5025 265–560	KCU25/KC5025 265–500	KCU25/KC5025 230–500	KCU25/KC5025 500–980	KCU25/KC5025 80–250	CBN available upon request
	unfavourable conditions, interrupted cuts, low speeds	KCU25/KC5025 200–325	KMF 135–265	KMF 80–265	KMF 200–600	KMF 30–80	—

Step 5 • Select insert and holder from catalogue 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 27mm
Depth of cut 4mm

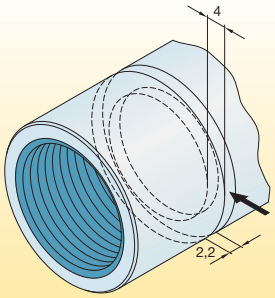
Recommendation

Insert A2022R10CF00
Grade KC5025
Cutting width 2,2mm
Insert seat size 2

Toolholder A2BNSN3202
Seat size 2

Congratulations!

You have successfully maximised cut-off productivity by selecting the best insert, toolholder, grade, and cutting specifications for your application!



Speed: 140 m/min
Feed: 0,05 mm/rev

How Do Catalogue Numbers Work?

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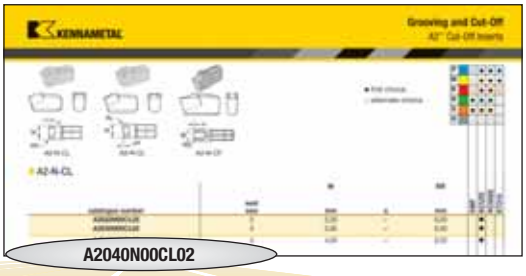


A2 — Insert Type

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

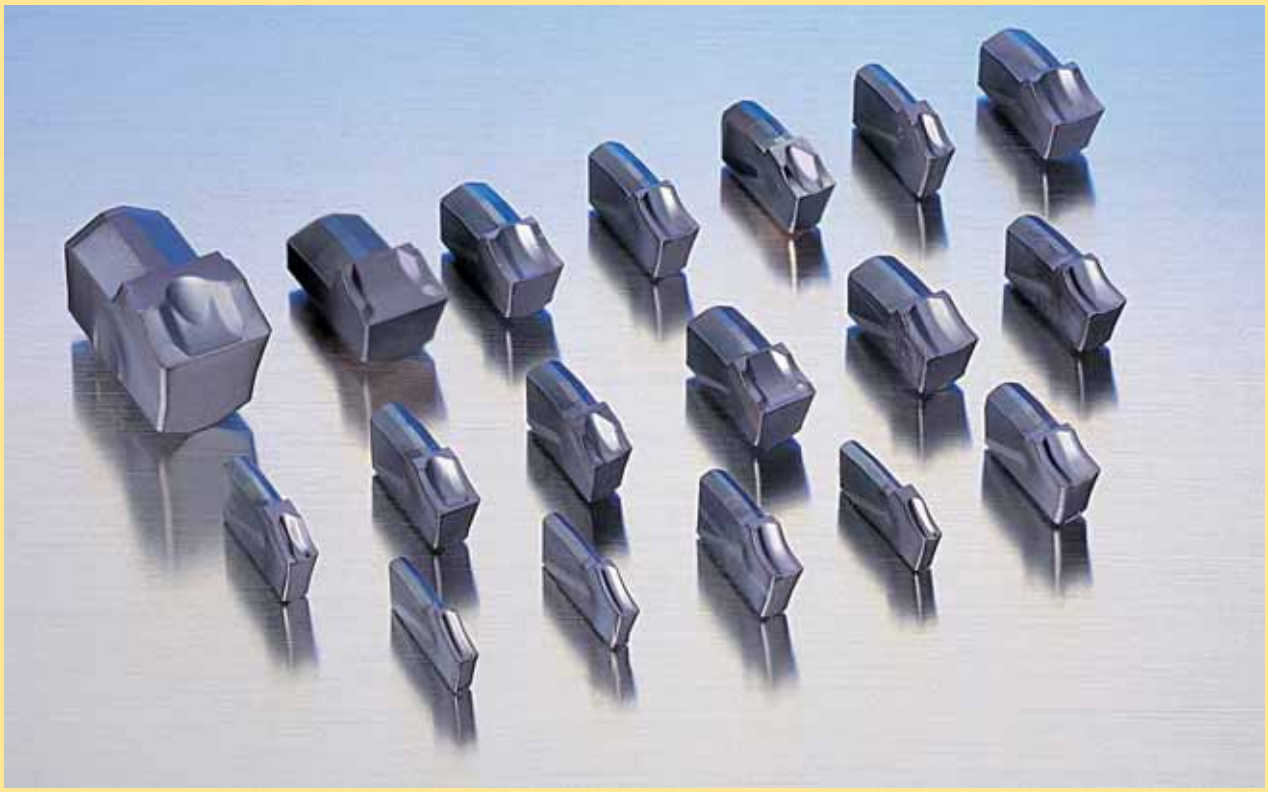
00 = neutral
06 = 6°
10 = 10°
15 = 15°
16 = 16°

CL — Chipbreaker

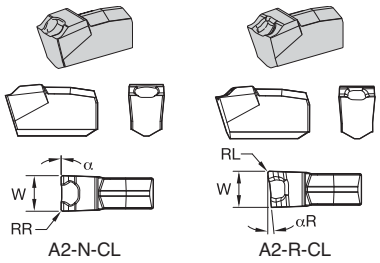
-CF
(**Cut-Off F**ine)
-CM
(**Cut-Off M**edium)
-CR
(**Cut-Off R**ough)
-CL
(**Cut-Off L**ow Feed)

02 — Corner Radius

	mm
00	0,0
01	0,1
02	0,2
03	0,3
04	0,4



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.



● first choice
○ alternate choice

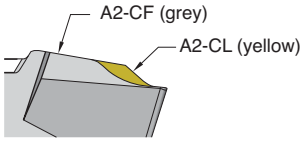
		KMF	KCU25	KC5025	KT315
P		○	●	●	●
M		○	●	●	●
K		○	●	●	○
N		●	●	●	
S		●	●	●	
H					

A2-N-CL

catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2022N00CL02	2	2,20	–	0,20		●		
A2030N00CL02	3	3,05	–	0,20		●		
A2040N00CL02	4	4,05	–	0,20		●		

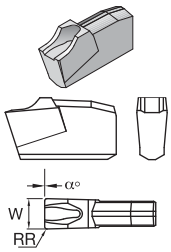
A2-R-CL

catalogue number	seat size	W mm	αR	RL mm	KMF	KCU25	KC5025	KT315
right hand								
A2016R16CL01	1	1,60	16	0,15		●		
A2022R06CL02	2	2,20	6	0,20		●		
A2030R06CL02	3	3,05	6	0,20		●		
A2040R06CL02	4	4,05	6	0,20		●		

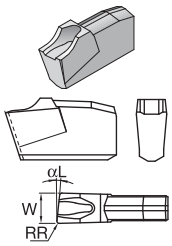


Tolerance on "W" Dimension
metric

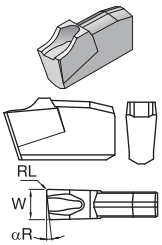
width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00



A2-N-CF



A2-L-CF



A2-R-CF

● first choice
○ alternate choice

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

A2-N-CF

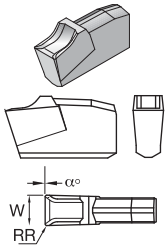
catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2014N00CF01	1B	1,40	–	0,15		●	●	
A2016N00CF00	1	1,55	–	–		●	●	
A2016N00CF01	1	1,60	–	0,15	●	●	●	●
A2022N00CF00	2	2,20	–	–		●	●	
A2022N00CF02	2	2,20	–	0,20	●	●	●	●
A2030N00CF02	3	3,00	–	0,20	●	●	●	●
A2030N00CF00	3	3,10	–	–		●	●	
A2040N00CF02	4	4,00	–	0,20	●	●	●	●
A2040N00CF00	4	4,05	–	–		●	●	
A2050N00CF03	5	5,00	–	0,30	●	●	●	

A2-L-CF

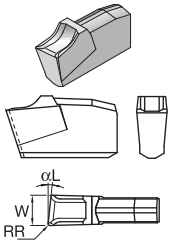
catalogue number	seat size	W mm	αL	RR mm				
left hand								
A2014L06CF01	1B	1,40	6	0,15		●	●	
A2016L06CF00	1	1,60	6	–		●	●	
A2016L10CF00	1	1,60	10	–		●	●	
A2016L16CF00	1	1,60	16	–		●	●	
A2022L06CF02	2	2,20	6	0,20		●	●	
A2022L10CF00	2	2,20	10	–		●	●	
A2022L16CF00	2	2,20	16	–		●	●	
A2030L06CF02	3	3,00	6	0,20	●	●	●	●
A2030L10CF00	3	3,00	10	–		●	●	
A2030L15CF00	3	3,00	15	–		●	●	
A2040L06CF02	4	4,00	6	0,20		●	●	
A2050L06CF03	5	5,00	6	0,30		●	●	

A2-R-CF

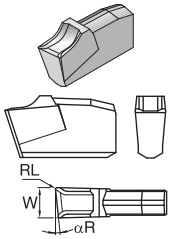
catalogue number	seat size	W mm	αR	RL mm				
right hand								
A2014R06CF01	1B	1,40	6	0,15		●	●	
A2016R06CF00	1	1,60	6	–	●	●	●	
A2016R10CF00	1	1,60	10	–		●	●	
A2016R16CF00	1	1,60	16	–		●	●	
A2022R06CF02	2	2,20	6	0,20	●	●	●	●
A2022R10CF00	2	2,20	10	–		●	●	
A2022R16CF00	2	2,20	16	–		●	●	
A2030R06CF02	3	3,00	6	0,20	●	●	●	●
A2030R10CF00	3	3,00	10	–		●	●	
A2030R15CF00	3	3,00	15	–		●	●	
A2040R06CF02	4	4,00	6	0,20		●	●	
A2050R06CF03	5	5,00	6	0,30		●	●	



A2-N-CM



A2-L-CM



A2-R-CM

● first choice
○ alternate choice

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

A2-N-CM

catalogue number	seat size	W mm	W α	RR mm	KMF	KCU25	KC5025	KT315
A2014N00CM01	1B	1,40	–	0,15		●	●	
A2016N00CM01	1	1,60	–	0,10		●	●	●
A2022N00CM02	2	2,20	–	0,20		●	●	
A2030N00CM02	3	3,00	–	0,20		●	●	
A2040N00CM02	4	4,00	–	0,20		●	●	
A2050N00CM03	5	5,00	–	0,30		●	●	
A2060N00CM03	6	6,00	–	0,30		●	●	
A2080N00CM04	8	8,00	–	0,40		●	●	

A2-L-CM

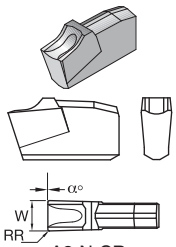
catalogue number	seat size	W mm	W αL	RR mm	KMF	KCU25	KC5025	KT315
left hand								
A2016L06CM00	1	1,60	6	–		●	●	
A2016L16CM00	1	1,60	16	–		●	●	
A2022L06CM00	2	2,20	6	–		●	●	
A2030L06CM01	3	3,00	6	0,10		●	●	

A2-R-CM

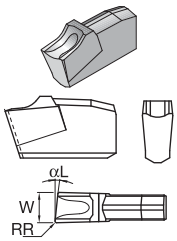
catalogue number	seat size	W mm	W αR	RL mm	KMF	KCU25	KC5025	KT315
right hand								
A2016R06CM00	1	1,60	6	–		●	●	
A2016R16CM00	1	1,60	16	–		●	●	
A2022R06CM00	2	2,20	6	–		●	●	
A2030R06CM01	3	3,00	6	0,10		●	●	

Tolerance on "W" Dimension
metric

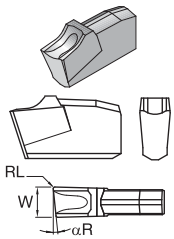
width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00



A2-N-CR



A2-L-CR



A2-R-CR

● first choice
○ alternate choice

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

A2-N-CR

catalogue number	seat size	W mm	α	RR mm	KMF	KCU25	KC5025	KT315
A2022N00CR02	2	2,20	–	0,20		●	●	●
A2030N00CR02	3	3,00	–	0,20		●	●	●
A2040N00CR02	4	4,00	–	0,20		●	●	●
A2050N00CR03	5	5,00	–	0,30		●	●	
A2060N00CR03	6	6,00	–	0,30		●	●	
A2080N00CR04	8	8,00	–	0,40		●	●	

A2-L-CR

catalogue number	seat size	W mm	αL	RR mm				
left hand								
A2022L06CR03	2	2,20	6	0,30		●	●	
A2030L06CR03	3	3,00	6	0,30		●	●	
A2040L06CR03	4	4,00	6	0,30		●	●	
A2050L06CR04	5	5,00	6	0,40		●	●	

A2-R-CR

catalogue number	seat size	W mm	αR	RL mm				
right hand								
A2022R06CR03	2	2,20	6	0,30		●	●	
A2030R06CR03	3	3,00	6	0,30		●	●	
A2040R06CR03	4	4,00	6	0,30		●	●	
A2050R06CR04	5	5,00	6	0,40		●	●	
A2060R06CR04	6	6,00	6	0,40		●	●	

Tolerance on "W" Dimension
metric

width	tolerance
1,4	+0,05/-0,05
1,6	+0,07/-0,07
2,2	+0,15/-0,00
3,0	+0,15/-0,00
4,0	+0,15/-0,00
5,0	+0,25/-0,00
6,0	+0,25/-0,00
8,0	+0,15/-0,00

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KENNAMETAL

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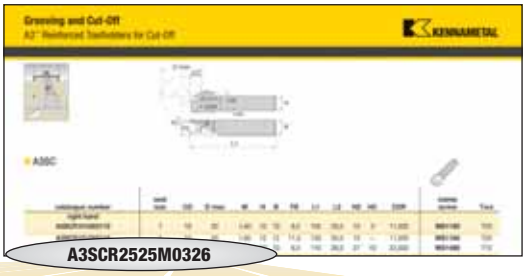


A3	S	C	R	2525M	03	26
A3 Screw-Clamp Holder*	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max. Cutting Depth
	S = Straight		**R** = Right **L** = Left			in millimeters

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

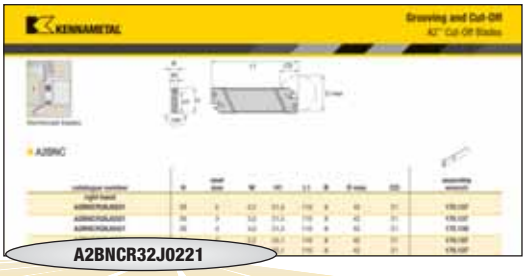
*NOTE:
A3™ screw-clamp O.D. holders are also designed to hold A2 inserts

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 the next page)

How Do Catalogue Numbers Work?

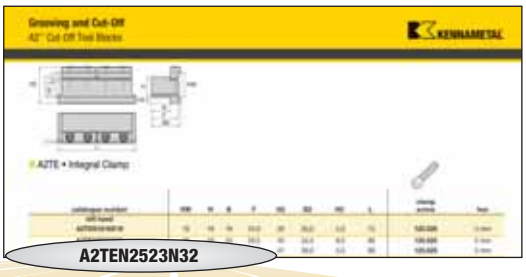
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A2BNCR32J0221

Cut-Off • Blades

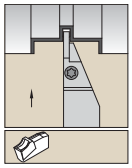
A2	BN	C	R	32	J	02	21
A2 Cut-Off Blade	Tool Style	Support Style	Hand of Tool	Blade Size	Overall Length	Seat Size	Max. Cutting Depth
	BN = 2 pocket blade **BH** = 1 pocket blade	**S** = Standard **C** = Reinforced	**R** = Right **L** = Left **N** = Neutral	in (mm) 19/26/32/52	Letter designation according to ISO (see table in tool block identification system below) **G** = 90mm **J** = 110mm **M** = 150mm **X** = Special	**1B** = 1,40mm **01** = 1,60mm **02** = 2,20mm **03** = 3,05mm **04** = 4,05mm **05** = 5,05mm **06** = 6,05mm **08** = 8,05mm	in (mm) (reinforced blade only)

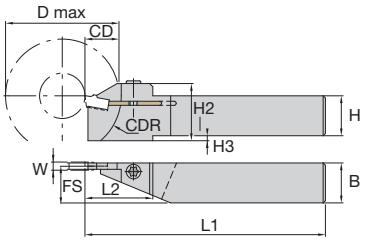


A2TEN2523N32

Cut-Off • Tool Blocks

A2	T	E	N	25	23	N	32
A2 Cut-Off	Tool Block	Clamping Style	Hand of Tool	Shank Height	Shank Width	Tool Length in (mm)	Blade Size
		E = Integral clamp **Z** = Removable clamp	**R** = Right **L** = Left **N** = Neutral	in millimeters	in millimeters	**J** = 110 **X** = Other length	in millimeters



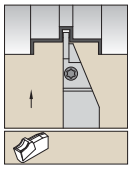


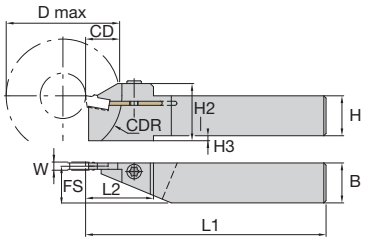
A3SC

catalogue number	seat size	CD	D max	W	H	B	FS	L1	L2	H2	H3	CDR	clamp screw	Torx
right hand														
A3SCR1010X0110	1	10	20	1,60	10	10	9,3	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0110	1	10	20	1,60	12	12	11,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1010J0116	1	16	42	1,60	10	10	9,3	110	28,0	27	10	22,000	**MS1488**	T15
A3SCR1212J0116	1	16	42	1,60	12	12	11,3	110	30,0	27	8	22,000	**MS1944**	T25
A3SCR1616J0116	1	16	42	1,60	16	16	15,3	110	30,0	27	4	22,000	**MS1944**	T25
A3SCR2020K0116	1	16	42	1,60	20	20	19,3	125	30,0	27	–	22,000	**MS1944**	T25
A3SCR1010X0210	2	10	20	2,20	10	10	9,1	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0210	2	10	20	2,20	12	12	11,1	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1212J0216	2	16	42	2,20	12	12	11,1	110	30,0	27	8	22,000	**MS1944**	T25
A3SCR1616J0216	2	16	42	2,20	16	16	15,1	110	30,0	27	4	22,000	**MS1944**	T25
A3SCR2020K0216	2	16	42	2,20	20	20	19,1	125	30,0	27	–	22,000	**MS1944**	T25
A3SCR2525M0226	2	26	62	2,20	25	25	24,1	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR1010X0310	3	10	20	3,00	10	10	8,8	130	20,0	15	2	11,000	**MS1160**	T20
A3SCR1212X0310	3	10	20	3,00	12	12	10,8	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1212J0316	3	16	52	3,00	12	12	10,8	110	30,0	27	8	27,000	**MS1944**	T25
A3SCR1616J0316	3	16	52	3,00	16	16	14,8	110	30,0	27	4	27,000	**MS1944**	T25
A3SCR2020K0316	3	16	52	3,00	20	20	18,8	125	30,0	27	–	27,000	**MS1944**	T25
A3SCR2525M0316	3	16	62	3,00	25	25	23,8	150	30,0	32	–	32,000	**MS1944**	T25
A3SCR2020K0326	3	26	62	3,00	20	20	18,8	125	42,0	27	–	32,000	**MS1595**	T30
A3SCR2525M0326	3	26	62	3,00	25	25	23,8	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR3225P0332	3	32	62	3,00	32	25	23,8	170	52,0	43	4	32,000	**MS1595**	T30
A3SCR1212X0410	4	10	20	4,00	12	12	10,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCR1616J0416	4	16	52	4,00	16	16	14,3	110	30,0	27	4	27,000	**MS1944**	T25
A3SCR2020K0416	4	16	52	4,00	20	20	18,3	125	30,0	27	–	27,000	**MS1944**	T25
A3SCR2525M0416	4	16	62	4,00	25	25	23,3	150	30,0	32	–	32,000	**MS1944**	T25
A3SCR2020K0426	4	26	62	4,00	20	20	18,3	125	42,0	27	–	32,000	**MS1595**	T30
A3SCR2525M0426	4	26	62	4,00	25	25	23,3	150	42,0	32	–	32,000	**MS1595**	T30
A3SCR3225P0432	4	32	62	4,00	32	25	23,3	170	52,0	43	4	32,000	**MS1595**	T30

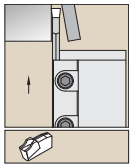
(continued)

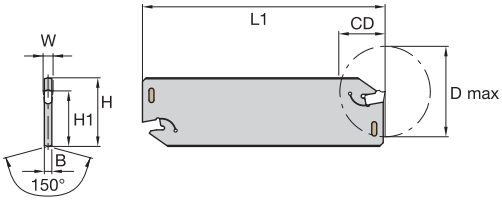
(A3SC continued)





catalogue number	seat size	CD	D max	W	H	B	FS	L1	L2	H2	H3	CDR	clamp screw	Torx
left hand														
A3SCL0808X0110	1	10	20	1,60	8	8	7,3	130	20,0	15	4	11,000	**191.916**	T15
A3SCL1010X0110	1	10	20	1,60	10	10	9,3	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0110	1	10	20	1,60	12	12	11,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1010J0116	1	16	42	1,60	10	10	9,3	110	28,0	27	10	22,000	**MS1488**	T15
A3SCL1212J0116	1	16	42	1,60	12	12	11,3	110	30,0	27	8	22,000	**MS1944**	T25
A3SCL1616J0116	1	16	42	1,60	16	16	15,3	110	30,0	27	4	22,000	**MS1944**	T25
A3SCL2020K0116	1	16	42	1,60	20	20	19,3	125	30,0	27	–	22,000	**MS1944**	T25
A3SCL1010X0210	2	10	20	2,20	10	10	9,1	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0210	2	10	20	2,20	12	12	11,1	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1212J0216	2	16	42	2,20	12	12	11,1	110	30,0	27	8	22,000	**MS1944**	T25
A3SCL1616J0216	2	16	42	2,20	16	16	15,1	110	30,0	27	4	22,000	**MS1944**	T25
A3SCL2020K0216	2	16	42	2,20	20	20	19,1	125	30,0	27	–	22,000	**MS1944**	T25
A3SCL2525M0226	2	26	62	2,20	25	25	24,1	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL1010X0310	3	10	20	3,00	10	10	8,8	130	20,0	15	2	11,000	**MS1160**	T20
A3SCL1212X0310	3	10	20	3,00	12	12	10,8	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1212J0316	3	16	52	3,00	12	12	10,8	110	30,0	27	8	27,000	**MS1944**	T25
A3SCL1616J0316	3	16	52	3,00	16	16	14,8	110	30,0	27	4	27,000	**MS1944**	T25
A3SCL2020K0316	3	16	52	3,00	20	20	18,8	125	30,0	27	–	27,000	**MS1944**	T25
A3SCL2525M0316	3	16	62	3,00	25	25	23,8	150	30,0	32	–	32,000	**MS1944**	T25
A3SCL2020K0326	3	26	62	3,00	20	20	18,8	125	42,0	27	–	32,000	**MS1595**	T30
A3SCL2525M0326	3	26	62	3,00	25	25	23,8	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL3225P0332	3	32	62	3,00	32	25	23,8	170	52,0	43	4	32,000	**MS1595**	T30
A3SCL1212X0410	4	10	20	4,00	12	12	10,3	130	20,0	15	–	11,000	**MS1160**	T20
A3SCL1616J0416	4	16	52	4,00	16	16	14,3	110	30,0	27	4	27,000	**MS1944**	T25
A3SCL2020K0416	4	16	52	4,00	20	20	18,3	125	30,0	27	–	27,000	**MS1944**	T25
A3SCL2525M0416	4	16	62	4,00	25	25	23,3	150	30,0	32	–	32,000	**MS1944**	T25
A3SCL2020K0426	4	26	62	4,00	20	20	18,3	125	42,0	27	–	32,000	**MS1595**	T30
A3SCL2525M0426	4	26	62	4,00	25	25	23,3	150	42,0	32	–	32,000	**MS1595**	T30
A3SCL3225P0432	4	32	62	4,00	32	25	23,3	170	52,0	43	4	32,000	**MS1595**	T30

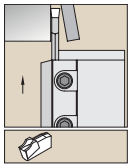




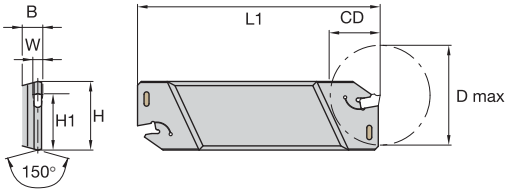
A2BNSN

catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
left hand									
A2BNSN19X1B13	19	1B	1,4	15,5	86	2	27	14	**170.137**
A2BNSN19X0116	19	1	1,6	15,5	86	2	30	16	**170.137**
A2BNSN19X02	19	2	2,2	15,5	86	2	–	20	**170.137**
A2BNSN26G1B15	26	1B	1,4	21,5	90	2	30	15	**170.137**
A2BNSN26J1B15	26	1B	1,4	21,5	110	2	30	15	**170.137**
A2BNSN26J0117	26	1	1,6	21,5	110	2	34	17	**170.137**
A2BNSN26M02	26	2	2,2	21,5	150	2	–	25	**170.137**
A2BNSN26G02	26	2	2,2	21,5	90	2	–	25	**170.137**
A2BNSN26J02	26	2	2,2	21,5	110	2	–	25	**170.137**
A2BNSN26M03	26	3	3,0	21,5	150	2	–	40	**170.137**
A2BNSN26J03	26	3	3,0	21,5	110	2	–	40	**170.137**
A2BNSN26G03	26	3	3,0	21,5	90	2	–	40	**170.137**
A2BNSN26J04	26	4	4,0	21,5	110	3	–	40	**170.137**
A2BNSN26J05	26	5	5,0	21,4	110	4	–	40	**170.130**
A2BNSN26J06	26	6	6,0	21,4	110	5	–	40	**170.130**
A2BNSN32M1B15	32	1B	1,4	25,1	150	2	30	15	**170.137**
A2BNSN32M0119	32	1	1,6	25,1	150	2	38	19	**170.137**
A2BNSN32M02	32	2	2,2	25,1	150	2	–	60	**170.137**
A2BNSN32H03	32	3	3,0	25,1	100	2	–	50	**170.137**
A2BNSN32M03	32	3	3,0	25,1	150	2	–	50	**170.137**
A2BNSN32M04	32	4	4,0	25,1	150	3	–	50	**170.137**
A2BNSN32M05	32	5	5,0	25,0	150	4	–	60	**170.130**
A2BNSN32M06	32	6	6,0	25,0	150	5	–	60	**170.130**
A2BNSN52X08	52	8	8,0	45,2	260	7	–	120	**170.132**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.



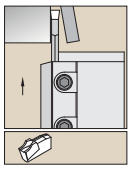
Reinforced blades.

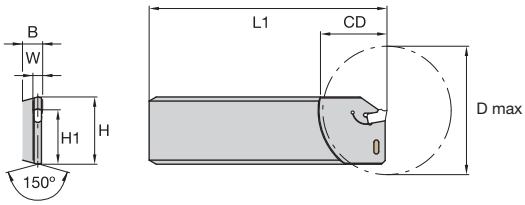


A2BNC

catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BNCR26J0221	26	2	2,2	21,5	110	8	42	21	**170.137**
A2BNCR26J0321	26	3	3,0	21,5	110	8	42	21	**170.137**
A2BNCR26J0421	26	4	4,0	21,5	110	8	42	21	**170.130**
A2BNCR32J0221	32	2	2,2	25,1	110	8	42	21	**170.137**
A2BNCR32J0321	32	3	3,0	25,1	110	8	42	21	**170.137**
left hand									
A2BNCL26J0221	26	2	2,2	21,5	110	8	42	21	**170.137**
A2BNCL26J0321	26	3	3,0	21,5	110	8	42	21	**170.137**
A2BNCL26J0421	26	4	4,0	21,5	110	8	42	21	**170.130**
A2BNCL32J0221	32	2	2,2	25,1	110	8	42	21	**170.137**
A2BNCL32J0321	32	3	3,0	25,1	110	8	42	21	**170.137**

NOTE: Assembly wrench 170.137 and 170.130 must be ordered separately.
Size 19 blades require careful insert installation using a plastic hammer.

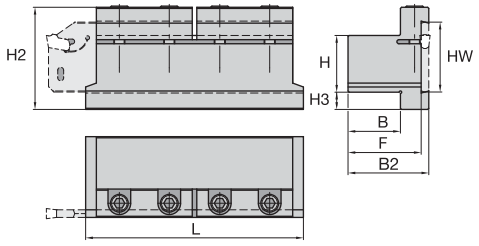




A2BHC

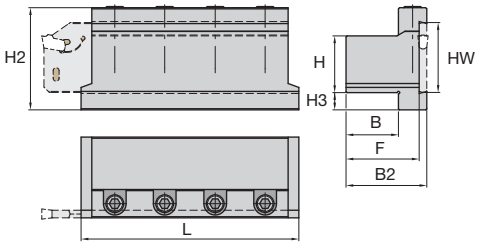
catalogue number	H	seat size	W	H1	L1	B	D max	CD	assembly wrench
right hand									
A2BHCR32K0333	32	3	3,0	25,1	125	8	66	33	**170.137**
A2BHCR32K0433	32	4	4,0	25,1	125	8	66	33	**170.137**
left hand									
A2BHCL32K0333	32	3	3,0	25,1	125	8	66	33	**170.137**
A2BHCL32K0433	32	4	4,0	25,1	125	8	66	33	**170.137**

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

catalogue number	HW	H	B	F	H2	B2	H3	L	clamp screw	hex
left hand										
A2TEN1616X19	19	16	16	24,0	30	26,0	4,0	75	**125.520**	4 mm
A2TEN2020X26	26	20	20	29,5	40	34,0	8,0	86	**125.625**	5 mm
A2TEN2523X26	26	25	23	33,5	41	38,0	3,0	86	**125.625**	5 mm
A2TEN2020J32	32	20	20	30,5	48	36,0	13,0	110	**125.630**	5 mm
A2TEN2520J32	32	25	20	30,5	48	36,0	8,0	110	**125.630**	5 mm
A2TEN3228J32	32	32	28	38,5	50	44,0	3,0	110	**125.630**	5 mm
A2TEN4038J32	32	40	38	48,5	59	54,0	4,0	110	**125.630**	5 mm
A2TEN4035X52	53	40	35	50,0	80	58,0	20,0	135	**125.835**	6 mm
A2TEN5038X52	53	50	38	51,0	80	59,0	9,0	135	**125.835**	6 mm



A2TZ • Removable Clamp

catalogue number	HW	H	B	F	H2	B2	H3	L	clamp	clamp screw	hex
left hand											
A2TZN2019X26	26	20	19	33,5	44	38,0	9,0	86	**168.682**	**125.616**	5 mm
A2TZN2523J32	32	25	23	34,5	48	40,0	8,0	110	**168.936**	**125.616**	5 mm
A2TZN3225J32	32	32	25	36,5	50	42,0	3,0	110	**168.936**	**125.616**	5 mm

Definitions and Guidelines

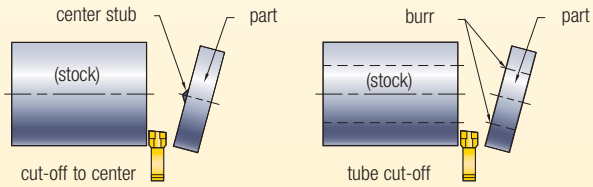
1. Width of cut (W) = width of the insert.

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

Reduce burr of cut-off faces:

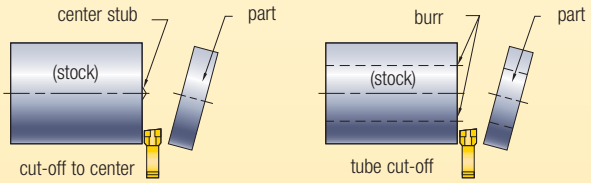
- Use lead angle-type inserts (Figures 1 and 2). Lead angle on a cut-off insert reduces the burr that remains on the part but decreases tool life and increases tool-side deflection and possibly cycle time.

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**

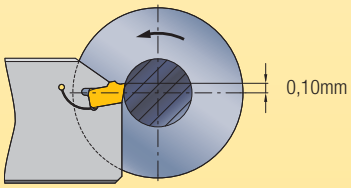


Right-hand lead insert leaves center stub or burr on stock and produces clean part surface.

- Check total height and maintain on center with part diameter.

- The cutting edge height should be within ±0,1mm to the center; recommended cutting position is 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 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.

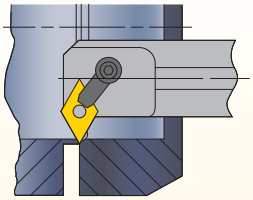


Figure 4
Internal chamfer line up

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.

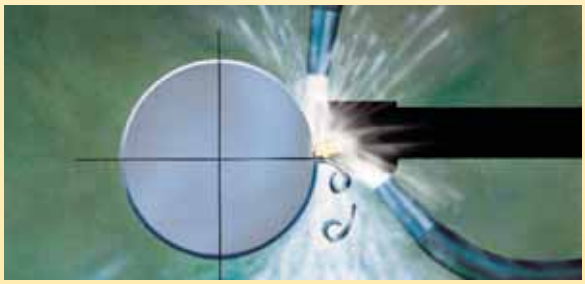


Figure 5
Preferred method for applying coolant

- 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.

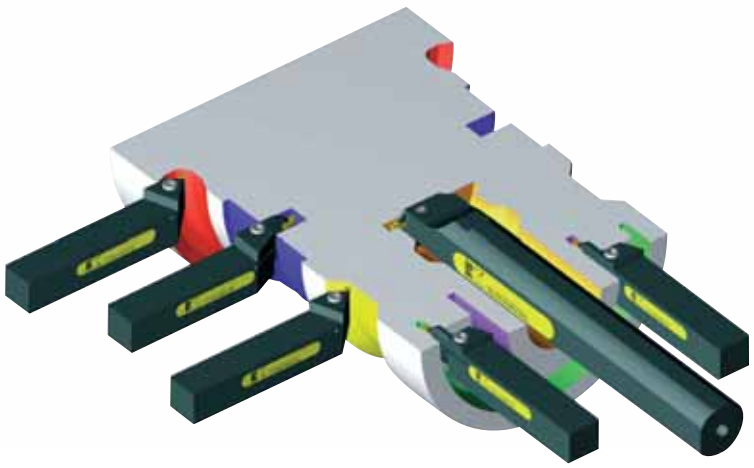
Features and Benefits

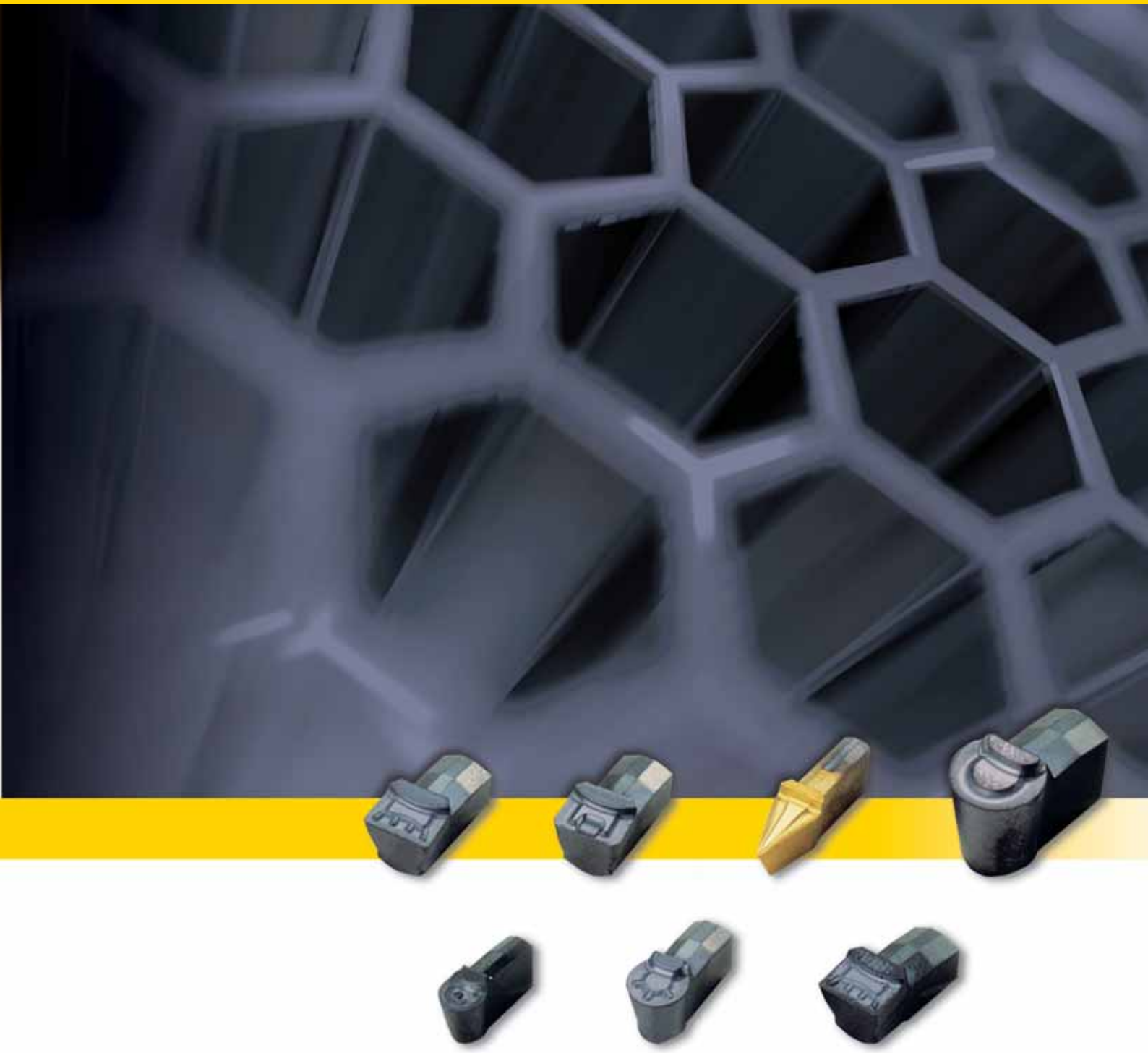
Performance

- 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 D112.

A3™ or A4™

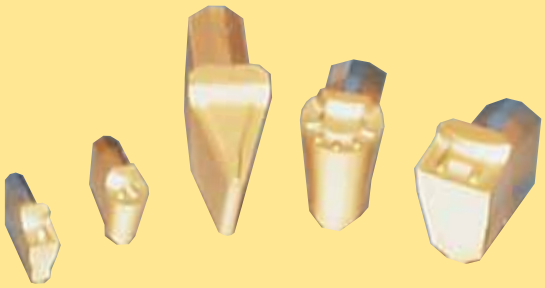
Deep Grooving
For grooving depth ≥1,5x grooving width, proceed to Step 2 for the A3 Deep Grooving program or see A4 Grooving and Turning program on page D62.

A3 Deep Grooving for Deep Internal, External, and Face Grooving Applications

System Capabilities

groove	min	max
width	2,25mm	10,05mm
depth	—	32mm

Face grooving diameter range 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 D36
Face and O.D. grooving with modular toolholders .....see pages D48–D57

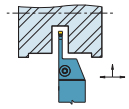
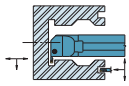
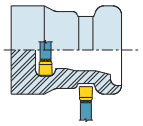
Step 3 • Select chipbreaker style and feed rate

DF — Deep Finishing	DM — Deep Medium	DR — Deep Roughing
		

(continued)

(continued)

Chipbreaker and Feed Rates • mm/rev

workpiece material and application	P	M	K	N	S	H
 deep O.D. grooving	DM 0,05–0,25	DF 0,05–0,15	DM 0,05–0,23	DF 0,05–0,25	DF 0,05–0,13	CBN tip on request 0,05–0,10
	DF 0,05–0,18	—	—	—	—	—
 face and I.D. grooving	DF 0,05–0,15	DF 0,05–0,13	DM 0,05–0,18	DF 0,05–0,18	DF 0,04–0,10	CBN tip on request 0,05–0,10
	—	—	DF 0,05–0,15	—	—	—
 profiling*	DR 0,10–0,40	DF 0,05–0,25	DR 0,10–0,40	DF 0,05–0,25	DF 0,05–0,25	CBN tip on request 0,05–0,10
	DF 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 • 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 330–750	KT315 230–560	KCU10/KC5010 230–720	KCU10/KC5010 590–2800	KCU10/KC5010 35–360	KB5625* 390–500
	KC9110 360–720	—	—	—	—	—
general purpose (first choice for general machining)	KCU10/KC5010 200–525	KCU10/KC5010 160–450	KCU25/KC5025 230–500	KCU10/KC5010 500–2400	KCU25/KC5025 35–200	KB5625* 260–425
unfavourable conditions (roughing, poor machine condition, interrupted cuts, low speed)	KCU25/KC5025 160–360	KCU25/KC5025 130–300	KCU25/KC5025 80–450	KCU25/KC5025 200–1000	KCU25/KC5025 35–150	KCU10/KC5010 35–115
	—	—	—	KMF 200–650	KMF 35–100	—

*NOTE: PCBN-tipped inserts in KB5625 are available on request.

Step 5 • Select insert and holder from catalogue 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 12mm
Groove width 6,35mm
Smooth cut

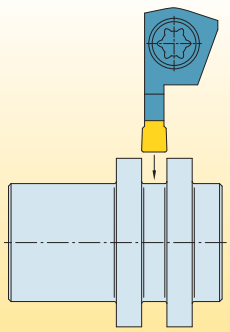
Recommendation

Insert A3G250I06P1DF
Grade KC5010
Insert width 6,35mm
Insert seat size 6

Toolholder A3SML2525M0616
Grooving depth 16mm
Seat size 2

Congratulations!

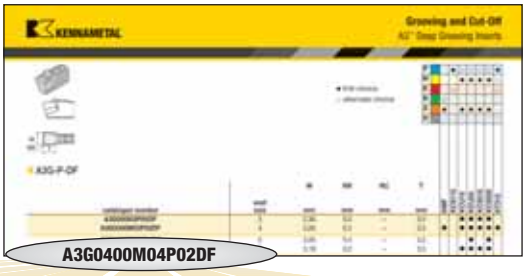
You have successfully maximised your productivity by selecting the best A3 insert geometry, grade, and cutting specifications for your application!



Speed: 180 m/min
Feed: 0,15 mm/rev

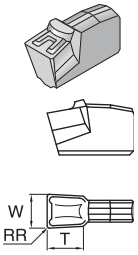
How Do Catalogue Numbers Work?

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



A3	G	0400	M	04	P	02	DF
Type of Program	Insert Style	Groove Width	Units	Insert Size	Insert Tolerance	Corner Radii	Chipbreaker
A3 = Deep Grooving	**G** = Square **R** = Full radius **V** = V-style 35º	Expressed in 1/100mm 0000 for V shape	**M** = Metric	03 (*)3S 04 (*)4S 05 06 08 10	**P** = Precision ground grooving width tolerance: ±.001" (0,025mm) **U** = Utility moulded grooving width tolerance: 3,05-4,05: +0,15mm / -0 5,05-10,05: +0,15mm / -0	**metric** 01 02 04 08 12 16 **full radius = 00**	**DF** = Deep Finishing **DM** = Deep Medium **DR** = Deep Roughing

(*) 3S/4S designates a small size insert for face grooving of small diameters.



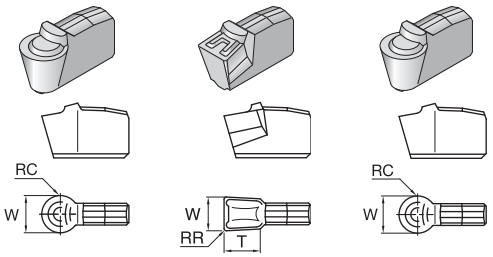
● first choice
○ alternate choice

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

A3G-P-DF

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G093I03P05DF	3	2,36	0,2	–	3,5			●	●	●	●	
A3G0300M03P02DF	3	3,00	0,2	–	3,5	●		●	●	●	●	●
A3G0300M03P04DF	3	3,00	0,4	–	3,5				●		●	
A3G125I03P05DF	3	3,18	0,2	–	3,5			●	●	●	●	
A3G125I04P05DF	4	3,18	0,2	–	3,5	●		●	●	●	●	●
A3G0400M04P08DF	4	4,00	0,8	–	3,5				●		●	
A3G0400M04P02DF	4	4,00	0,2	–	3,5	●		●	●	●	●	
A3G0400M04P04DF	4	4,00	0,4	–	3,5	●	●	●	●	●	●	●
A3G187I05P05DF	5	4,75	0,2	–	4,5			●	●	●	●	
A3G0500M05P04DF	5	5,00	0,4	–	4,5	●	●	●	●	●	●	
A3G0500M05P02DF	5	5,00	0,2	–	4,5			●	●	●	●	
A3G0500M05P08DF	5	5,00	0,8	–	4,5				●		●	
A3G218I06P1DF	6	5,54	0,4	–	4,5			●	●	●	●	
A3G218I06P2DF	6	5,54	0,8	–	4,5				●	●	●	
A3G0600M06P08DF	6	6,00	0,8	–	4,5	●		●	●	●	●	
A3G0600M06P12DF	6	6,00	1,2	–	4,5				●		●	
A3G0600M06P04DF	6	6,00	0,4	–	4,5	●		●	●	●	●	
A3G250I06P2DF	6	6,35	0,8	–	4,5			●	●	●	●	
A3G250I06P1DF	6	6,35	0,4	–	4,5			●	●	●	●	
A3G250I08P2DF	8	6,35	0,8	–	6,0			●	●	●	●	
A3G250I08P1DF	8	6,35	0,4	–	6,0			●	●	●	●	
A3G312I08P1DF	8	7,93	0,4	–	6,0			●	●	●	●	
A3G312I08P2DF	8	7,93	0,8	–	6,0					●	●	
A3G0800M08P08DF	8	8,00	0,8	–	6,0			●	●	●	●	
A3G0800M08P04DF	8	8,00	0,4	–	6,0			●	●	●	●	

NOTE: RR=RL



A3R-P-DF A3G-P-DF A3R-P-DF

● first choice
○ alternate choice

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

A3R-P-DF

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R093I03P00DF	3	2,36	–	1,2	–			●	●	●	●	
A3R0300M03P00DF	3	3,00	–	1,5	–	●		●	●	●	●	●
A3R125I03P00DF	3	3,18	–	1,6	–			●	●	●	●	
A3R125I04P00DF	4	3,18	–	1,6	–	●		●	●	●	●	
A3R0400M04P00DF	4	4,00	–	2,0	–	●		●	●	●	●	
A3R187I05P00DF	5	4,75	–	2,4	–			●	●	●	●	
A3R0500M05P00DF	5	5,00	–	2,5	–			●	●	●	●	
A3R218I06P00DF	6	5,54	–	2,8	–			●	●	●	●	
A3R0600M06P00DF	6	6,00	–	3,0	–	●		●	●	●	●	
A3R250I06P00DF	6	6,35	–	3,2	–			●	●	●	●	
A3R250I08P00DF	8	6,35	–	3,2	–			●	●	●	●	
A3R312I08P00DF	8	7,93	–	4,0	–	●					●	
A3R0800M08P00DF	8	8,00	–	4,0	–				●		●	

A3G-P-DF • Face Grooving

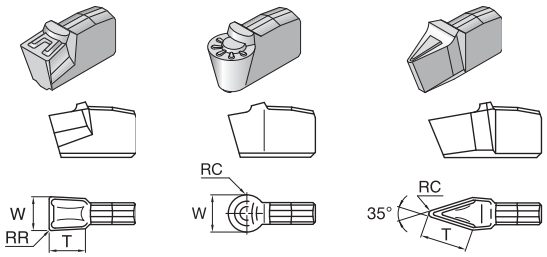
catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0300M3SP02DF	3S	3,00	0,2	–	3,5				●	●	●	
A3G0300M3SP04DF	3S	3,00	0,4	–	3,5			●	●	●	●	
A3G125I3SP05DF	3S	3,18	0,2	–	3,5						●	
A3G0400M4SP04DF	4S	4,00	0,4	–	3,5			●	●	●	●	
A3G0400M4SP02DF	4S	4,00	0,2	–	3,5			●	●	●	●	
A3G0400M4SP08DF	4S	4,00	0,8	–	3,5						●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").

A3R-P-DF • Face Grooving

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0300M3SP00DF	3S	3,00	–	1,5	–			●		●	●	
A3R0400M4SP00DF	4S	4,00	–	2,0	–			●	●	●	●	

NOTE: Face grooving for small diameter 25–60mm (.98–2.36").



A3G-U-DM A3R-U-DR A3V-U-DM

● first choice
○ alternate choice

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

A3G-U-DM

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3G0305M03U02DM	3	3,05	0,2	–	3,5				●		●	●
A3G0405M04U02DM	4	4,05	0,2	–	3,5				●		●	●
A3G0505M05U02DM	5	5,05	0,2	–	4,5		●		●		●	
A3G0605M06U04DM	6	6,05	0,4	–	4,5		●		●		●	
A3G0805M08U04DM	8	8,05	0,4	–	6,0				●		●	
A3G1005M10U05DM	10	10,05	0,5	–	6,0				●		●	

A3R-U-DR

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3R0305M03U00DR	3	3,05	–	1,5	–				●		●	●
A3R0405M04U00DR	4	4,05	–	2,0	–				●		●	
A3R0505M05U00DR	5	5,12	–	2,6	–				●		●	
A3R0605M06U00DR	6	6,05	–	3,0	–				●		●	
A3R0805M08U00DR	8	8,18	–	4,1	–		●		●		●	

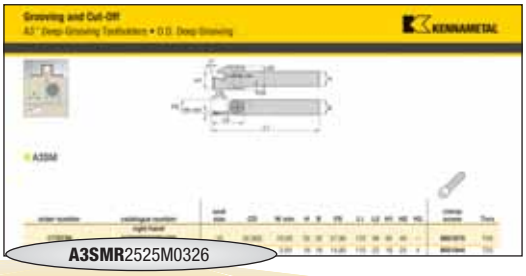
A3V-U-DM

catalogue number	seat size	W mm	RR mm	RC mm	T mm	KMF	KC9110	KCU10	KCU25	KC5010	KC5025	KT315
A3V0000M04U02DM	4	–	–	0,2	6,0				●		●	
A3V0000M08U08DM	8	–	–	0,8	11,0				●		●	

NOTE: A3V-U-DM insert can be used in A3PS... or A3US... toolholders only.

How Do Catalogue Numbers Work?

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



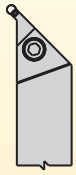
A3
Type of Program

A3 = Screw Clamp Holder

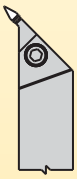
S
Tool Style

S = Straight

D = 45° profiling



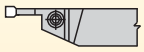
P = 117,5° V-profiling
U = 93° V-profiling



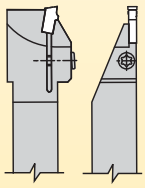
M
Support Type

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

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

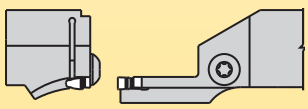


C = Reinforced maximum support width circular clearance



A = Inboard sweep face grooving toolholder

B = Outboard sweep face grooving toolholder



R
Hand of Tool

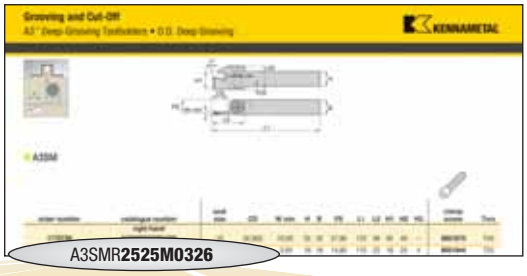
R = Right

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.



2525M

Shank Size

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

03

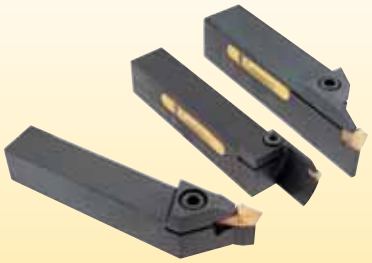
Seat Size

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

26

Max Cutting Depth

in millimetres



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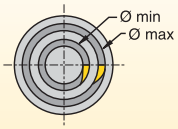
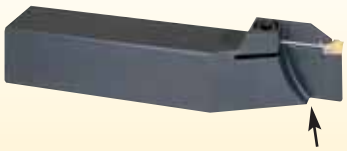
Face Grooving Diameter *(optional)*

Ø min – Ø max

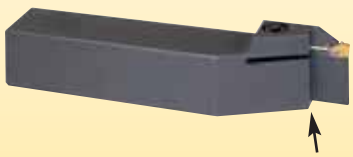


Screw-Clamping Holder Options



Example: **A3SCR-1603-26**

circular clearance



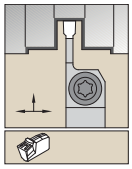
Example: **A3SSR-1605-26**

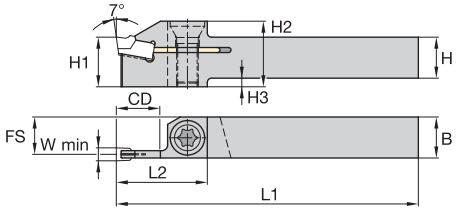
straight clearance

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.



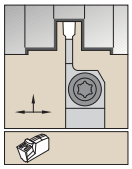


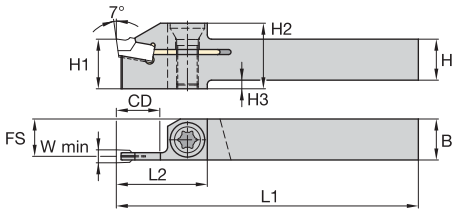
A3SM

order number	catalogue number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	right hand													
1775738	**A3SMR3232P1032**	10	32,000	10,00	32	32	27,80	170	58	32	40	–	**MS1875**	T45
1775526	**A3SMR1616J0310**	3	10,000	3,00	16	16	14,80	110	23	16	25	4	**MS1944**	T25
1775528	**A3SMR2020K0310**	3	10,000	3,00	20	20	18,80	125	23	20	25	–	**MS1944**	T25
1775530	**A3SMR2525M0310**	3	10,000	3,00	25	25	23,80	150	23	25	30	–	**MS1944**	T25
1775532	**A3SMR1616J0316**	3	16,000	3,00	16	16	14,80	110	30	16	27	4	**MS1944**	T25
1775624	**A3SMR2020K0316**	3	16,000	3,00	20	20	18,80	125	30	20	27	–	**MS1944**	T25
1775626	**A3SMR2525M0316**	3	16,000	3,00	25	25	23,80	150	30	25	32	–	**MS1944**	T25
1775628	**A3SMR1616J0410**	4	10,000	4,00	16	16	14,30	110	23	16	25	4	**MS1944**	T25
1775630	**A3SMR2020K0410**	4	10,000	4,00	20	20	18,30	125	23	20	25	–	**MS1944**	T25
1775632	**A3SMR2525M0410**	4	10,000	4,00	25	25	23,30	150	23	25	30	–	**MS1944**	T25
1775656	**A3SMR2020K0416**	4	16,000	4,00	20	20	18,30	125	30	20	27	–	**MS1944**	T25
1775659	**A3SMR2525M0416**	4	16,000	4,00	25	25	23,30	150	30	25	32	–	**MS1944**	T25
1775673	**A3SMR2020K0426**	4	26,000	4,00	20	20	18,30	125	42	20	27	–	**MS1595**	T30
1775677	**A3SMR2525M0426**	4	26,000	4,00	25	25	23,30	150	43	25	32	–	**MS1595**	T30
1777836	**A3SMR2020K0516**	5	16,000	5,00	20	20	17,80	125	33	20	27	–	**MS1595**	T30
1775681	**A3SMR2525M0516**	5	16,000	5,00	25	25	22,80	150	33	25	32	–	**MS1595**	T30
1775683	**A3SMR3225P0516**	5	16,000	5,00	32	25	22,80	170	32	32	39	–	**MS1595**	T30
1775685	**A3SMR2525M0526**	5	26,000	5,00	25	25	22,80	150	43	25	32	–	**MS1595**	T30
1775687	**A3SMR3225P0526**	5	26,000	5,00	32	25	22,80	170	42	32	39	–	**MS1595**	T30
1775689	**A3SMR3225P0532**	5	32,000	5,00	32	25	22,80	170	52	32	39	–	**MS1595**	T30
1777833	**A3SMR2020K0616**	6	16,000	6,00	20	20	17,30	125	32	20	27	–	**MS1595**	T30
1775691	**A3SMR2525M0616**	6	16,000	6,00	25	25	22,30	150	32	25	32	–	**MS1595**	T30
1775715	**A3SMR2525M0626**	6	26,000	6,00	25	25	22,30	150	42	25	32	–	**MS1595**	T30
1775717	**A3SMR3225P0626**	6	26,000	6,00	32	25	22,30	170	42	32	39	–	**MS1595**	T30
1775720	**A3SMR3225P0632**	6	32,000	6,00	32	25	22,30	170	52	32	39	–	**MS1595**	T30
1775722	**A3SMR2525M0816**	8	16,000	8,00	25	25	21,30	150	42	25	33	–	**MS1875**	T45
1775734	**A3SMR2525M0826**	8	26,000	8,00	25	25	21,30	150	50	25	33	–	**MS1875**	T45
1775736	**A3SMR3232P0832**	8	32,000	8,00	32	32	28,30	170	53	32	40	–	**MS1875**	T45

(continued)

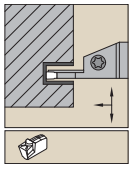
(A3SM continued)

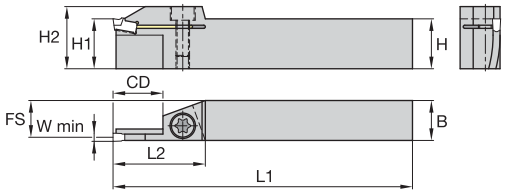


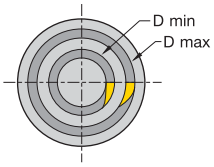


order number	catalogue number	seat size	CD	W min	H	B	FS	L1	L2	H1	H2	H3	clamp screw	Torx
	left hand													
1775739	**A3SML3232P1032**	10	32,000	10,00	32	32	27,80	170	58	32	40	—	**MS1875**	T45
1775527	**A3SML1616J0310**	3	10,000	3,00	16	16	14,80	110	23	16	25	4	**MS1944**	T25
1775529	**A3SML2020K0310**	3	10,000	3,00	20	20	18,80	125	23	20	25	—	**MS1944**	T25
1775531	**A3SML2525M0310**	3	10,000	3,00	25	25	23,80	150	23	25	30	—	**MS1944**	T25
1775623	**A3SML1616J0316**	3	16,000	3,00	16	16	14,80	110	30	16	27	4	**MS1944**	T25
1775625	**A3SML2020K0316**	3	16,000	3,00	20	20	18,80	125	30	20	27	—	**MS1944**	T25
1775627	**A3SML2525M0316**	3	16,000	3,00	25	25	23,80	150	30	25	32	—	**MS1944**	T25
1775631	**A3SML2020K0410**	4	10,000	4,00	20	20	18,30	125	23	20	25	—	**MS1944**	T25
1775653	**A3SML2525M0410**	4	10,000	4,00	25	25	23,30	150	23	25	30	—	**MS1944**	T25
1775657	**A3SML2020K0416**	4	16,000	4,00	20	20	18,30	125	30	20	27	—	**MS1944**	T25
1775661	**A3SML2525M0416**	4	16,000	4,00	25	25	23,30	150	30	25	32	—	**MS1944**	T25
1775675	**A3SML2020K0426**	4	26,000	4,00	20	20	18,30	125	42	20	27	—	**MS1595**	T30
1775679	**A3SML2525M0426**	4	26,000	4,00	25	25	23,30	150	43	25	32	—	**MS1595**	T30
1777837	**A3SML2020K0516**	5	16,000	5,00	20	20	17,80	125	33	20	27	—	**MS1595**	T30
1775682	**A3SML2525M0516**	5	16,000	5,00	25	25	22,80	150	33	25	32	—	**MS1595**	T30
1775684	**A3SML3225P0516**	5	16,000	5,00	32	25	22,80	170	32	32	39	—	**MS1595**	T30
1775686	**A3SML2525M0526**	5	26,000	5,00	25	25	22,80	150	43	25	32	—	**MS1595**	T30
1775688	**A3SML3225P0526**	5	26,000	5,00	32	25	22,80	170	42	32	39	—	**MS1595**	T30
1775690	**A3SML3225P0532**	5	32,000	5,00	32	25	22,80	170	52	32	39	—	**MS1595**	T30
1777835	**A3SML2020K0616**	6	16,000	6,00	20	20	17,30	125	32	20	27	—	**MS1595**	T30
1775692	**A3SML2525M0616**	6	16,000	6,00	25	25	22,30	150	32	25	32	—	**MS1595**	T30
1775716	**A3SML2525M0626**	6	26,000	6,00	25	25	22,30	150	42	25	32	—	**MS1595**	T30
1775718	**A3SML3225P0626**	6	26,000	6,00	32	25	22,30	170	42	32	39	—	**MS1595**	T30
1775721	**A3SML3225P0632**	6	32,000	6,00	32	25	22,30	170	52	32	39	—	**MS1595**	T30
1775735	**A3SML2525M0826**	8	26,000	8,00	25	25	21,30	150	50	25	33	—	**MS1875**	T45
1775737	**A3SML3232P0832**	8	32,000	8,00	32	32	28,30	170	53	32	40	—	**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.





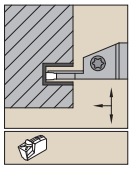


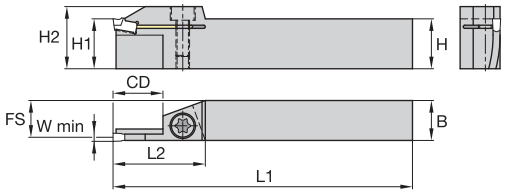
A3SA

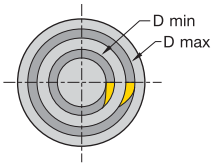
order number	catalogue number	seat size	CD	D min	D max	W min	H	B	FS	L1	L2	H1	H2	clamp screw	Torx
	right hand														
1125452	A3SAR2020M0425-060-075	4	25	60,00	75,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125715	A3SAR2520M0425-060-075	4	25	60,00	75,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125468	A3SAR2020M0425-075-100	4	25	75,00	100,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125728	A3SAR2520M0425-075-100	4	25	75,00	100,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125476	A3SAR2020M0425-100-180	4	25	100,00	180,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125734	A3SAR2520M0425-100-180	4	25	100,00	180,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125484	A3SAR2020M0425-180-250	4	25	180,00	250,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125746	A3SAR2520M0425-180-250	4	25	180,00	250,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125495	A3SAR2020M0425-250-350	4	25	250,00	350,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125751	A3SAR2520M0425-250-350	4	25	250,00	350,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125504	A3SAR2020M0425-350-999	4	25	350,00	–	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1125768	A3SAR2520M0425-350-999	4	25	350,00	–	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1596756	A3SAR2020M4S10-025-030	4S	10	25,00	30,00	4,00	20	20	18,50	150	27	20	30	MS1970	T30
1596718	A3SAR2520M4S10-025-030	4S	10	25,00	30,00	4,00	25	20	18,50	150	27	25	30	MS1970	T30
1596758	A3SAR2020M4S10-030-035	4S	10	30,00	35,00	4,00	20	20	18,50	150	27	20	30	MS1970	T30
1596720	A3SAR2520M4S10-030-035	4S	10	30,00	35,00	4,00	25	20	18,50	150	27	25	30	MS1970	T30
1596760	A3SAR2020M4S20-035-040	4S	20	35,00	40,00	4,00	20	20	18,50	150	37	20	30	MS1970	T30
1596741	A3SAR2520M4S20-035-040	4S	20	35,00	40,00	4,00	25	20	18,50	150	37	25	30	MS1970	T30
1596781	A3SAR2020M4S25-040-050	4S	25	40,00	50,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1596744	A3SAR2520M4S25-040-050	4S	25	40,00	50,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1596782	A3SAR2020M4S25-050-060	4S	25	50,00	60,00	4,00	20	20	18,50	150	42	20	30	MS1970	T30
1596746	A3SAR2520M4S25-050-060	4S	25	50,00	60,00	4,00	25	20	18,50	150	42	25	30	MS1970	T30
1125833	A3SAR2520M0525-060-075	5+6	25	60,00	75,00	5,00	25	20	17,80	150	42	25	30	MS1970	T30
1125586	A3SAR2020M0530-075-100	5+6	30	75,00	100,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125850	A3SAR2520M0530-075-100	5+6	30	75,00	100,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125602	A3SAR2020M0530-100-180	5+6	30	100,00	180,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125859	A3SAR2520M0530-100-180	5+6	30	100,00	180,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125611	A3SAR2020M0530-180-250	5+6	30	180,00	250,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125868	A3SAR2520M0530-180-250	5+6	30	180,00	250,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125628	A3SAR2020M0530-250-350	5+6	30	250,00	350,00	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125877	A3SAR2520M0530-250-350	5+6	30	250,00	350,00	5,00	25	20	17,80	150	47	25	30	MS1970	T30
1125637	A3SAR2020M0530-350-999	5+6	30	350,00	–	5,00	20	20	17,80	150	47	20	30	MS1970	T30
1125885	A3SAR2520M0530-350-999	5+6	30	350,00	–	5,00	25	20	17,80	150	47	25	30	MS1970	T30

(continued)

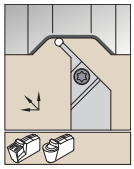
(A3SA continued)

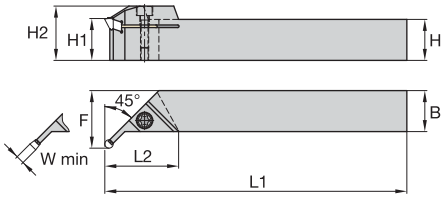






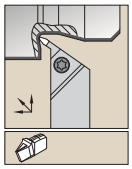
order number	catalogue number	seat size	CD	D min	D max	W min	H	B	FS	L1	L2	H1	H2	clamp screw	Torx
	left hand														
1125393	**A3SAL2020M0425-060-075**	4	25	60,00	75,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125654	**A3SAL2520M0425-060-075**	4	25	60,00	75,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125403	**A3SAL2020M0425-075-100**	4	25	75,00	100,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125663	**A3SAL2520M0425-075-100**	4	25	75,00	100,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125411	**A3SAL2020M0425-100-180**	4	25	100,00	180,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125671	**A3SAL2520M0425-100-180**	4	25	100,00	180,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125418	**A3SAL2020M0425-180-250**	4	25	180,00	250,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125682	**A3SAL2520M0425-180-250**	4	25	180,00	250,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125426	**A3SAL2020M0425-250-350**	4	25	250,00	350,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125689	**A3SAL2520M0425-250-350**	4	25	250,00	350,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125435	**A3SAL2020M0425-350-999**	4	25	350,00	–	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1125704	**A3SAL2520M0425-350-999**	4	25	350,00	–	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1596784	**A3SAL2020M4S10-025-030**	4S	10	25,00	30,00	4,00	20	20	18,50	150	27	20	30	**MS1970**	T30
1596747	**A3SAL2520M4S10-025-030**	4S	10	25,00	30,00	4,00	25	20	18,50	150	27	25	30	**MS1970**	T30
1596748	**A3SAL2520M4S10-030-035**	4S	10	30,00	35,00	4,00	25	20	18,50	150	27	25	30	**MS1970**	T30
1596787	**A3SAL2020M4S20-035-040**	4S	20	35,00	40,00	4,00	20	20	18,50	150	37	20	30	**MS1970**	T30
1596750	**A3SAL2520M4S20-035-040**	4S	20	35,00	40,00	4,00	25	20	18,50	150	37	25	30	**MS1970**	T30
1596788	**A3SAL2020M4S25-040-050**	4S	25	40,00	50,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1596752	**A3SAL2520M4S25-040-050**	4S	25	40,00	50,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1596789	**A3SAL2020M4S25-050-060**	4S	25	50,00	60,00	4,00	20	20	18,50	150	42	20	30	**MS1970**	T30
1596755	**A3SAL2520M4S25-050-060**	4S	25	50,00	60,00	4,00	25	20	18,50	150	42	25	30	**MS1970**	T30
1125772	**A3SAL2520M0525-060-075**	5+6	25	60,00	75,00	5,00	25	20	17,80	150	42	25	30	**MS1970**	T30
1125787	**A3SAL2520M0530-075-100**	5+6	30	75,00	100,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125531	**A3SAL2020M0530-100-180**	5+6	30	100,00	180,00	5,00	20	20	17,80	150	47	20	30	**MS1970**	T30
1125797	**A3SAL2520M0530-100-180**	5+6	30	100,00	180,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125804	**A3SAL2520M0530-180-250**	5+6	30	180,00	250,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125561	**A3SAL2020M0530-250-350**	5+6	30	250,00	350,00	5,00	20	20	17,80	150	47	20	30	**MS1970**	T30
1125813	**A3SAL2520M0530-250-350**	5+6	30	250,00	350,00	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30
1125825	**A3SAL2520M0530-350-999**	5+6	30	350,00	–	5,00	25	20	17,80	150	47	25	30	**MS1970**	T30

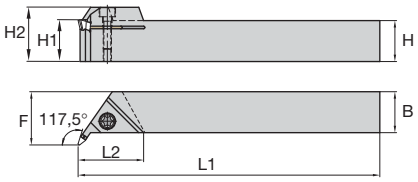




A3DS

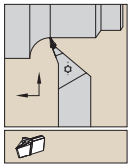
order number	catalogue number	seat size	W min	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand											
1245699	A3DSR1616J04	3+4	3,00	16	16	22,00	110	34	16	23	MS1944	T25
1245658	A3DSR2020K04	3+4	3,00	20	20	26,00	125	33	20	27	MS1944	T25
1245652	A3DSR2525M06	5+6	5,00	25	25	31,00	150	40	25	32	MS1595	T30
1245649	A3DSR3232P08	8	8,00	32	32	41,00	170	48	32	40	MS1595	T30
	left hand											
1245697	A3DSL1616J04	3+4	3,00	16	16	22,00	110	34	16	23	MS1944	T25
1245655	A3DSL2020K04	3+4	3,00	20	20	26,00	125	33	20	27	MS1944	T25
1245677	A3DSL2525M06	5+6	5,00	25	25	31,00	150	40	25	32	MS1595	T30
1245637	A3DSL3232P08	8	8,00	32	32	41,00	170	48	32	40	MS1595	T30

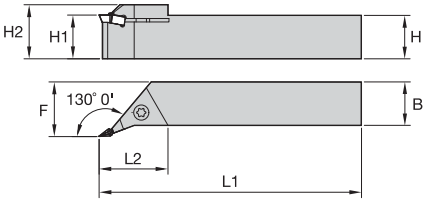




A3PS

order number	catalogue number	seat size	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand										
1245657	A3PSR2020K04	4	20	20	25,00	125	34	20	27	MS1595	T30
1245681	A3PSR2525M04	4	25	25	32,00	150	34	25	32	MS1595	T30
1245653	A3PSR2525M08	8	25	25	32,00	150	50	25	33	MS1875	T45
1245632	A3PSR3225P08	8	32	25	32,00	170	50	32	40	MS1875	T45
	left hand										
1245706	A3PSL2020K04	4	20	20	25,00	125	34	20	27	MS1595	T30
1245675	A3PSL2525M04	4	25	25	32,00	150	34	25	32	MS1595	T30
1245678	A3PSL2525M08	8	25	25	32,00	150	50	25	33	MS1875	T45





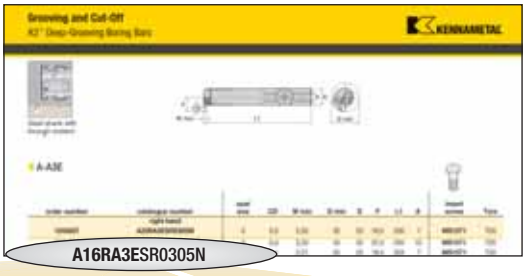
A3US

order number	catalogue number	seat size	H	B	F	L1	L2	H1	H2	clamp screw	Torx
	right hand										
1245672	**A3USR2525M04**	4	25	25	32,00	150	40	25	32	**MS1595**	T30
	left hand										
1245670	**A3USL2525M04**	4	25	25	32,00	150	40	25	32	**MS1595**	T30

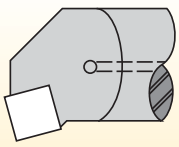
NOTE: Approach angle 93°.
Only insert A3V-U-DM can be used with these toolholders.

How Do Catalogue Numbers Work?

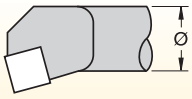
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



A
Steel Bar with Coolant



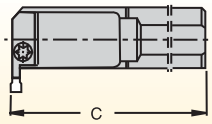
16
Bar Diameter



metric bars:
Bar diameter in millimetres

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

R
Bar Length

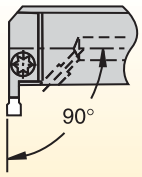


metric bars:
R = 200mm
S = 250mm
T = 300mm

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

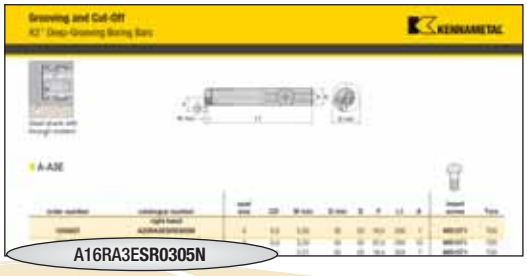
A3
A3 System

E
Tool Style



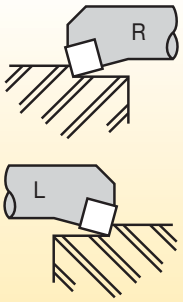
E = End mounted (90°)

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

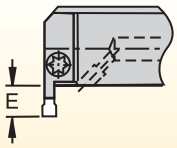


S	R	03	05	N
Support Type	Hand of Tool	Seat Size	Grooving Depth in mm	Tool Units

S = Standard support for a wide range of groove widths



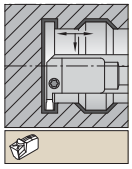
pocket seat size	cutting width (mm)
03	2,25–3,05
04	3,05–4,05
05	4,05–5,05
06	5,05–6,05
08	6,05–8,05



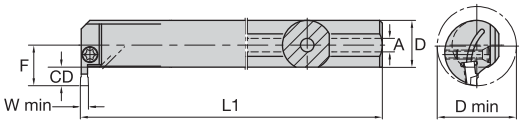
conversions:

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

M = Metric
N = Inch



Steel shank with through coolant.



A-A3E

order number	catalogue number	seat size	CD	W min	D min	D	F	L1	A	insert screw	Torx
	right hand										
1245607	**A25RA3ESR0305M**	3	5,0	2,20	32	25	18,5	200	7	**MS1571**	T20
1245611	**A32SA3ESR0305M**	3	5,0	2,20	45	32	22,0	250	10	**MS1571**	T20
1245609	**A25RA3ESR0408M**	3+4	8,0	3,00	40	25	20,5	200	7	**MS1571**	T20
1245613	**A32SA3ESR0408M**	3+4	8,0	3,00	48	32	25,0	250	10	**MS1571**	T20
1245615	**A40TA3ESR0408M**	3+4	8,0	3,00	56	40	28,0	300	10	**MS1571**	T20
1245619	**A40TA3ESR0510M**	5	10,0	4,00	60	40	30,0	300	10	**MS1162**	T25
1245621	**A32SA3ESR0612M**	5+6	12,0	5,00	45	32	28,0	250	10	**MS1162**	T25
1245623	**A40TA3ESR0612M**	5+6	12,0	5,00	64	40	32,0	300	10	**MS1162**	T25
1245625	**A40TA3ESR0815M**	8	15,0	6,00	70	40	35,0	300	10	**MS1163**	T30
	left hand										
1245606	**A25RA3ESL0305M**	3	5,0	2,20	32	25	18,5	200	7	**MS1571**	T20
1245610	**A32SA3ESL0305M**	3	5,0	2,20	45	32	22,0	250	10	**MS1571**	T20
1245608	**A25RA3ESL0408M**	3+4	8,0	3,00	40	25	20,5	200	7	**MS1571**	T20
1245612	**A32SA3ESL0408M**	3+4	8,0	3,00	48	32	25,0	250	10	**MS1571**	T20
1245614	**A40TA3ESL0408M**	3+4	8,0	3,00	56	40	28,0	300	10	**MS1571**	T20
1245616	**A32SA3ESL0510M**	5	10,0	4,00	45	32	26,0	250	10	**MS1162**	T25
1245620	**A32SA3ESL0612M**	5+6	12,0	5,00	45	32	28,0	250	10	**MS1162**	T25
1245622	**A40TA3ESL0612M**	5+6	12,0	5,00	64	40	32,0	300	10	**MS1162**	T25
1245624	**A40TA3ESL0815M**	8	15,0	6,00	70	40	35,0	300	10	**MS1163**	T30

A2-CL Geometry with Beyond™ Insert Technology

Maximise your cut-off productivity.

A2-CL Geometry

- Beyond grades enable optimum performance and extended tool life.
- Tighter chipbreaker capability when machining low carbon steel.
- Excellent chip evacuation in low-feed applications.
- Provides an expansion to existing -CR, -CM, and -CF geometries.
- Offers improved stability and rigidity.

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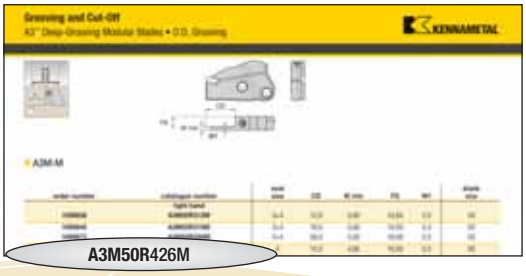
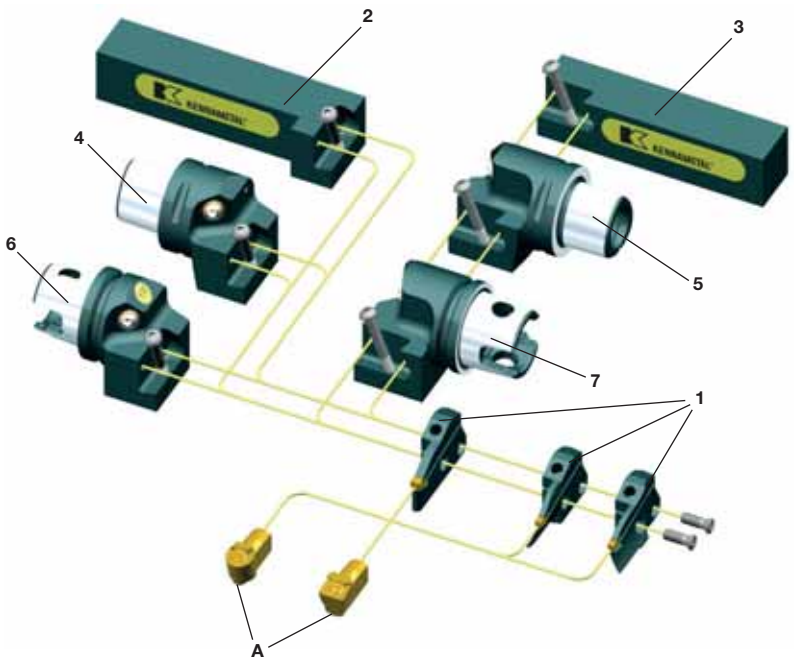


A3M	50	R
A3 Modular Grooving System	Blade Size	Hand of Tool

R = Right hand

L = Left hand



Legend		page(s)
A	A2™/A3 Inserts	D30–D33
1	O.D. and Face Grooving Blades	D48–D50
2	KGME Toolholder	D54
3	KGMS Toolholder	D54
4	Capto® KGME Cutting Unit	D57
5	Capto KGMS Cutting Unit	D57
6	KM™ KGME Cutting Unit	D55–D56
7	KM KGMS Cutting Unit	D55–D56

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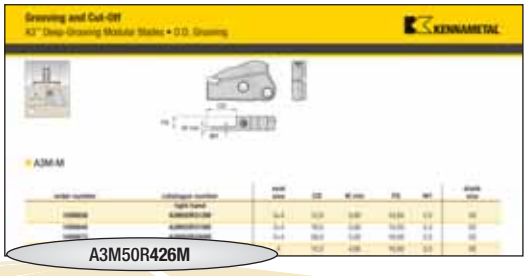
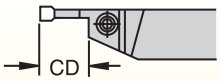


4
Seat Size

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

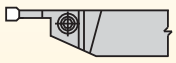


conversions:

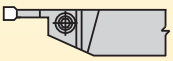
mm		inch
12mm	=	.47
16mm	=	.63
20mm	=	.79
26mm	=	1.02
32mm	=	1.26

M
Tool Style

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

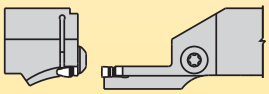


M = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters

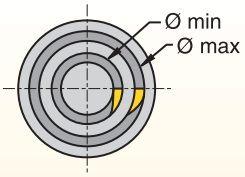


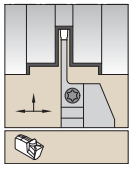
A = Inboard sweep face grooving toolholder

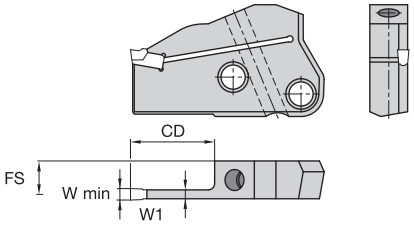
B = Outboard sweep face grooving toolholder



Face Grooving Diameter Range



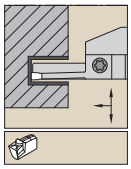


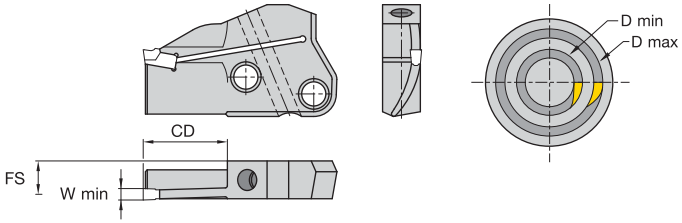


A3M-M

order number	catalogue number	seat size	CD	W min	FS	W1	blade size
	right hand						
1599838	**A3M50R312M**	3+4	12,0	3,00	10,50	2,3	50
1599840	**A3M50R316M**	3+4	16,0	3,00	10,50	2,3	50
1599873	**A3M50R326M**	3+4	26,0	3,00	10,50	2,3	50
1599875	**A3M50R412M**	4	12,0	4,00	10,00	3,3	50
1599912	**A3M50R416M**	4	16,0	4,00	10,00	3,3	50
1599915	**A3M50R426M**	4	26,0	4,00	10,00	3,3	50
1599917	**A3M50R432M**	4	32,0	4,00	10,00	3,3	50
1599919	**A3M50R516M**	5+6	16,0	4,75	9,50	4,3	50
1599921	**A3M50R526M**	5+6	26,0	4,75	9,50	4,3	50
1599923	**A3M50R532M**	5+6	32,0	4,75	9,50	4,3	50
1599925	**A3M50R616M**	6	16,0	6,00	9,00	5,3	50
1599927	**A3M50R626M**	6	26,0	6,00	9,00	5,3	50
1599929	**A3M50R632M**	6	32,0	6,00	9,00	5,3	50
	left hand						
1599839	**A3M50L312M**	3+4	12,0	3,00	10,50	2,3	50
1599872	**A3M50L316M**	3+4	16,0	3,00	10,50	2,3	50
1599874	**A3M50L326M**	3+4	26,0	3,00	10,50	2,3	50
1599911	**A3M50L412M**	4	12,0	4,00	10,00	3,3	50
1599913	**A3M50L416M**	4	16,0	4,00	10,00	3,3	50
1599916	**A3M50L426M**	4	26,0	4,00	10,00	3,3	50
1599918	**A3M50L432M**	4	32,0	4,00	10,00	3,3	50
1599920	**A3M50L516M**	5+6	16,0	4,75	9,50	4,3	50
1599922	**A3M50L526M**	5+6	26,0	4,75	9,50	4,3	50
1599924	**A3M50L532M**	5+6	32,0	4,75	9,50	4,3	50
1599926	**A3M50L616M**	6	16,0	6,00	9,00	5,3	50
1599928	**A3M50L626M**	6	26,0	6,00	9,00	5,3	50
1599930	**A3M50L632M**	6	32,0	6,00	9,00	5,3	50

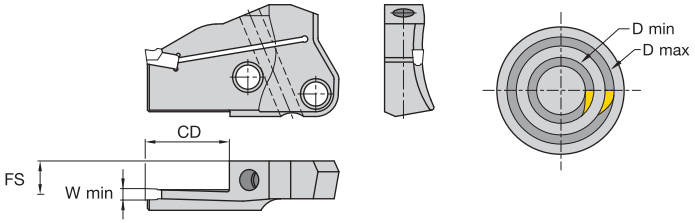
NOTE: Seat size 4 inserts can be used in seat size 3 and 4 toolholders, within cutting width range.
Seat size 6 inserts can be used in seat size 5 and 6 toolholders, within cutting width range.
Use the larger seat size toolholder for optimal performance.





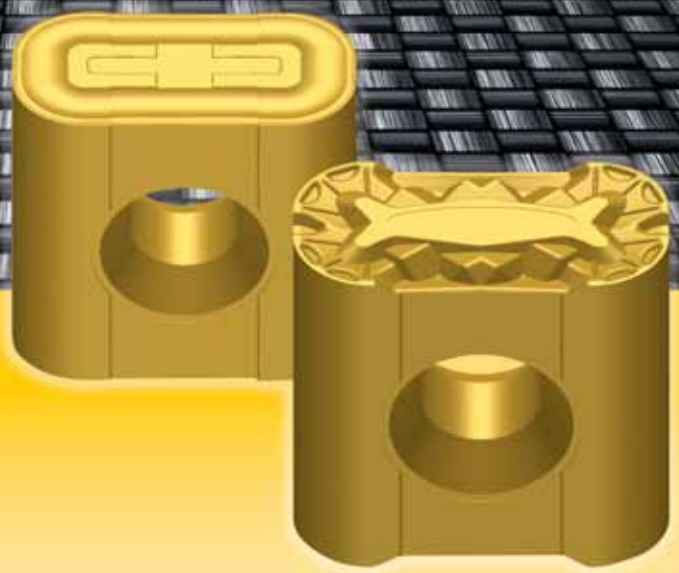
A3M-A Inboard Sweep

order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542476	**A3M50R312A025030**	3S	25	30	3,00	12,0	10,50	50
2542477	**A3M50R312A030035**	3S	30	35	3,00	12,0	10,50	50
2542478	**A3M50R316A035040**	3S	35	40	3,00	16,0	10,50	50
2542479	**A3M50R316A040050**	3S	40	50	3,00	16,0	10,50	50
2542480	**A3M50R316A050060**	3S	50	60	3,00	16,0	10,50	50
1599952	**A3M50R426A060075**	4	60	75	4,00	26,0	10,00	50
1599953	**A3M50R426A075100**	4	75	100	4,00	26,0	10,00	50
1599955	**A3M50R426A100180**	4	100	180	4,00	26,0	10,00	50
1599956	**A3M50R426A180250**	4	180	250	4,00	26,0	10,00	50
1599957	**A3M50R426A250350**	4	250	350	4,00	26,0	10,00	50
1599958	**A3M50R426A350999**	4	350	–	4,00	26,0	10,00	50
1599937	**A3M50R412A025030**	4S	25	30	4,00	12,0	10,00	50
1599938	**A3M50R412A030035**	4S	30	35	4,00	12,0	10,00	50
1599939	**A3M50R420A035040**	4S	35	40	4,00	20,0	10,00	50
1599940	**A3M50R420A040050**	4S	40	50	4,00	20,0	10,00	50
1599951	**A3M50R420A050060**	4S	50	60	4,00	20,0	10,00	50
1599959	**A3M50R526A060075**	5+6	60	75	5,00	26,0	9,50	50
1599960	**A3M50R532A075100**	5+6	75	100	5,00	32,0	9,50	50
1599961	**A3M50R532A100180**	5+6	100	180	5,00	32,0	9,50	50
1599962	**A3M50R532A180250**	5+6	180	250	5,00	32,0	9,50	50
1599963	**A3M50R532A250350**	5+6	250	350	5,00	32,0	9,50	50
1599964	**A3M50R532A350999**	5+6	350	–	5,00	32,0	9,50	50
	left hand							
2542481	**A3M50L312A025030**	3S	25	30	3,00	12,0	10,50	50
2542482	**A3M50L312A030035**	3S	30	35	3,00	12,0	10,50	50
2542483	**A3M50L316A035040**	3S	35	40	3,00	16,0	10,50	50
2542484	**A3M50L316A040050**	3S	40	50	3,00	16,0	10,50	50
2542485	**A3M50L316A050060**	3S	50	60	3,00	16,0	10,50	50
1600142	**A3M50L426A060075**	4	60	75	4,00	26,0	10,00	50
1600143	**A3M50L426A075100**	4	75	100	4,00	26,0	10,00	50
1600144	**A3M50L426A100180**	4	100	180	4,00	26,0	10,00	50
1600145	**A3M50L426A180250**	4	180	250	4,00	26,0	10,00	50
1600146	**A3M50L426A250350**	4	250	350	4,00	26,0	10,00	50
1600147	**A3M50L426A350999**	4	350	–	4,00	26,0	10,00	50
1599965	**A3M50L412A025030**	4S	25	30	4,00	12,0	10,00	50
1599966	**A3M50L412A030035**	4S	30	35	4,00	12,0	10,00	50
1600096	**A3M50L420A035040**	4S	35	40	4,00	20,0	10,00	50
1600098	**A3M50L420A040050**	4S	40	50	4,00	20,0	10,00	50
1600099	**A3M50L420A050060**	4S	50	60	4,00	20,0	10,00	50
1600149	**A3M50L526A060075**	5+6	60	75	5,00	26,0	9,50	50
1600150	**A3M50L532A075100**	5+6	75	100	5,00	32,0	9,50	50
1600161	**A3M50L532A100180**	5+6	100	180	5,00	32,0	9,50	50
1600162	**A3M50L532A180250**	5+6	180	250	5,00	32,0	9,50	50
1600163	**A3M50L532A250350**	5+6	250	350	5,00	32,0	9,50	50
1600164	**A3M50L532A350999**	5+6	350	–	5,00	32,0	9,50	50



A3M-B Outboard Sweep

order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
2542486	A3M50R312B025030	3S	25	30	3,00	12,0	10,50	50
2542487	A3M50R312B030035	3S	30	35	3,00	12,0	10,50	50
2542488	A3M50R316B035040	3S	35	40	3,00	16,0	10,50	50
2542489	A3M50R316B040050	3S	40	50	3,00	16,0	10,50	50
2542490	A3M50R316B050060	3S	50	60	3,00	16,0	10,50	50
1600165	A3M50R412B025030	4S	25	30	4,00	12,0	10,00	50
1600166	A3M50R412B030035	4S	30	35	4,00	12,0	10,00	50
1600167	A3M50R420B035040	4S	35	40	4,00	20,0	10,00	50
1600168	A3M50R420B040050	4S	40	50	4,00	20,0	10,00	50
1600169	A3M50R420B050060	4S	50	60	4,00	20,0	10,00	50
1600170	A3M50R426B060075	4	60	75	4,00	26,0	10,00	50
1600171	A3M50R426B075100	4	75	100	4,00	26,0	10,00	50
1600172	A3M50R426B100180	4	100	180	4,00	26,0	10,00	50
1600173	A3M50R426B180250	4	180	250	4,00	26,0	10,00	50
1600174	A3M50R426B250350	4	250	350	4,00	26,0	10,00	50
1600175	A3M50R426B350999	4	350	–	4,00	26,0	10,00	50
1600176	A3M50R526B060075	5+6	60	75	5,00	26,0	9,50	50
1600177	A3M50R532B075100	5+6	75	100	5,00	32,0	9,50	50
1600178	A3M50R532B100180	5+6	100	180	5,00	32,0	9,50	50
1600179	A3M50R532B180250	5+6	180	250	5,00	32,0	9,50	50
1600180	A3M50R532B250350	5+6	250	350	5,00	32,0	9,50	50
1600191	A3M50R532B350999	5+6	350	–	5,00	32,0	9,50	50
	left hand							
2542491	A3M50L312B025030	3S	25	30	3,00	12,0	10,50	50
2542492	A3M50L312B030035	3S	30	35	3,00	12,0	10,50	50
2542493	A3M50L316B035040	3S	35	40	3,00	16,0	10,50	50
2542494	A3M50L316B040050	3S	40	50	3,00	16,0	10,50	50
2542495	A3M50L316B050060	3S	50	60	3,00	16,0	10,50	50
1600192	A3M50L412B025030	4S	25	30	4,00	12,0	10,00	50
1600193	A3M50L412B030035	4S	30	35	4,00	12,0	10,00	50
1600194	A3M50L420B035040	4S	35	40	4,00	20,0	10,00	50
1600195	A3M50L420B040050	4S	40	50	4,00	20,0	10,00	50
1600196	A3M50L420B050060	4S	50	60	4,00	20,0	10,00	50
1600197	A3M50L426B060075	4	60	75	4,00	26,0	10,00	50
1600198	A3M50L426B075100	4	75	100	4,00	26,0	10,00	50
1600212	A3M50L426B100180	4	100	180	4,00	26,0	10,00	50
1600213	A3M50L426B180250	4	180	250	4,00	26,0	10,00	50
1600214	A3M50L426B250350	4	250	350	4,00	26,0	10,00	50
1600215	A3M50L426B350999	4	350	–	4,00	26,0	10,00	50
1600216	A3M50L526B060075	5+6	60	75	5,00	26,0	9,50	50
1600217	A3M50L532B075100	5+6	75	100	5,00	32,0	9,50	50
1600218	A3M50L532B100180	5+6	100	180	5,00	32,0	9,50	50
1600219	A3M50L532B180250	5+6	180	250	5,00	32,0	9,50	50
1600241	A3M50L532B250350	5+6	250	350	5,00	32,0	9,50	50
1600242	A3M50L532B350999	5+6	350	–	5,00	32,0	9,50	50



Kennametal™ Tools for Railways and Wheel Machining

Kennametal offers a complete line of tooling for wheel and axle maintenance in railroad shops. All tools incorporate the latest in tooling technology for maximum metal removal and higher productivity. All tools are proven performers in actual use over extended periods of time, under a wide range of operating conditions. Standard off-the-shelf inserts and fewer pieces of hardware reduce inventory and operating costs. Included in this range are tools for reconditioning mounted wheel sets, wheel boring, wheel truing, axle turning, and journal burnishing.

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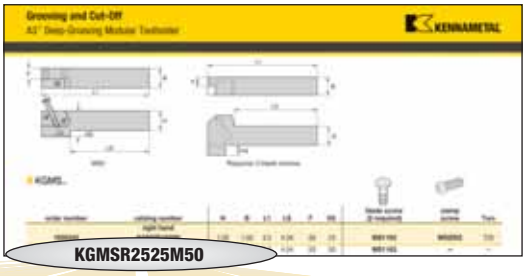
How Do Catalogue Numbers Work?

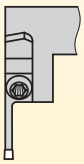
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

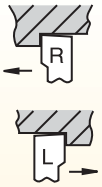


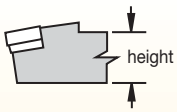
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

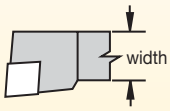
E







shank height in millimetres



shank width in millimetres

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

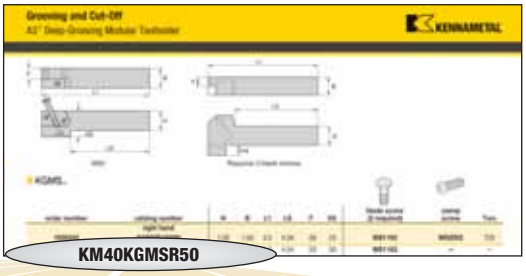
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

M = 150mm
N = Inch
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

How Do Catalogue Numbers Work?

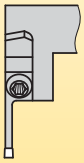
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

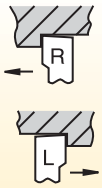


KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions

S

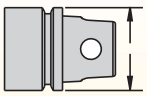
E



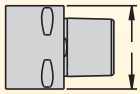


Y = Mazak® INTEGREX® Y-series machines

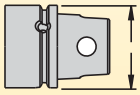
KM size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



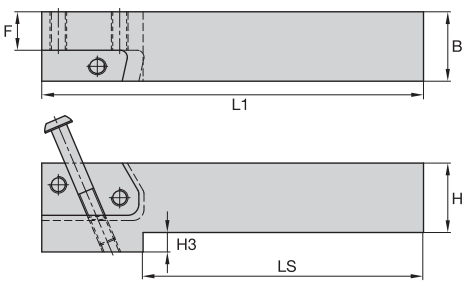
Kennametal Capto® size
C4 = 40mm dia.
C5 = 50mm dia.
C6 = 63mm dia.



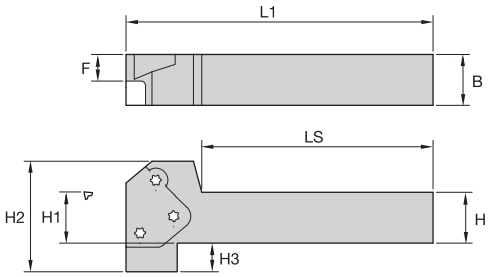
KMXMZ size
KM63XMZ™ = 63mm dia.



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



M50
2 blade screws required

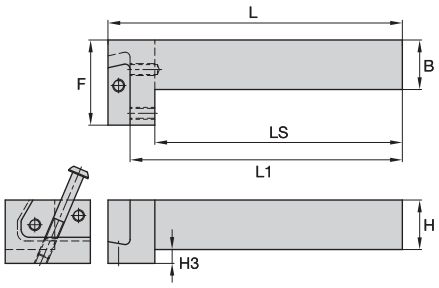


M65
3 blade screws required

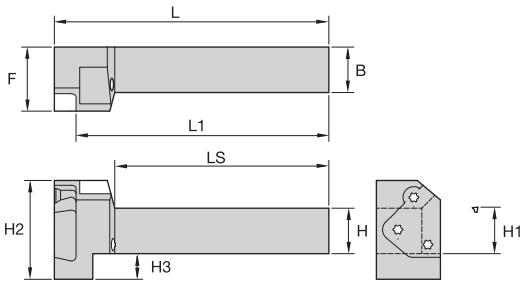
KGMS..


order number	catalogue number	B	H	L1	F	LS	H3	blade screw	Torx	clamp screw	Torx
	right hand										
1600249	**KGMSR2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553429	**KGMSR2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621083	**KGMSR3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553431	**KGMSR3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–
	left hand										
1600250	**KGMSL2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553430	**KGMSL2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621084	**KGMSL3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553432	**KGMSL3232P65**	32	32	170,00	20,79	158,00	7,00	**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 D58–D59.



M50
2 blade screws required

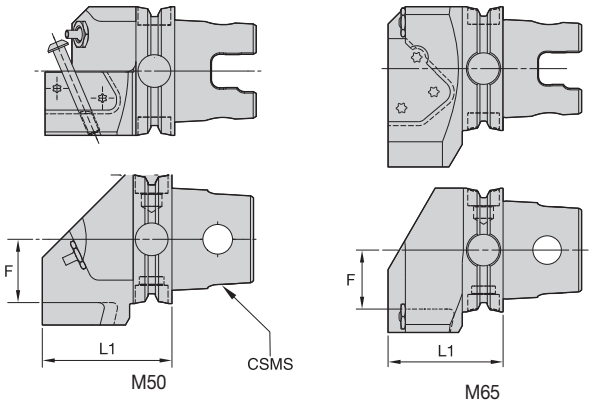


M65
3 blade screws required

KGME..


order number	catalogue number	B	H	L1	F	LS	H3	L	blade screw	Torx	clamp screw	Torx
	right hand											
1600270	**KGMER2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553453	**KGMER2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621085	**KGMER3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553455	**KGMER3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–
	left hand											
1600271	**KGMEL2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553454	**KGMEL2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621086	**KGMEL3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553456	**KGMEL3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–

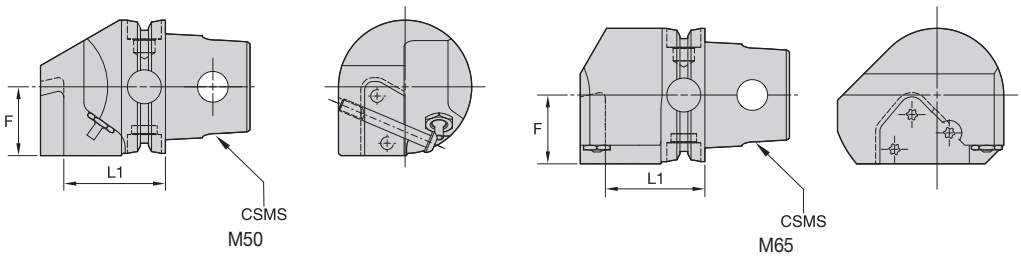
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D58–D59.



KM-KGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
3950268	**KM40TSKGMSR50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590203	**KM63TSKGMSR65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670383	**KM80TSKGMSR50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–
	left hand							
3950267	**KM40TSKGMSL50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590204	**KM63TSKGMSL65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670371	**KM80TSKGMSL50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	40,0	**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 D58–D59.

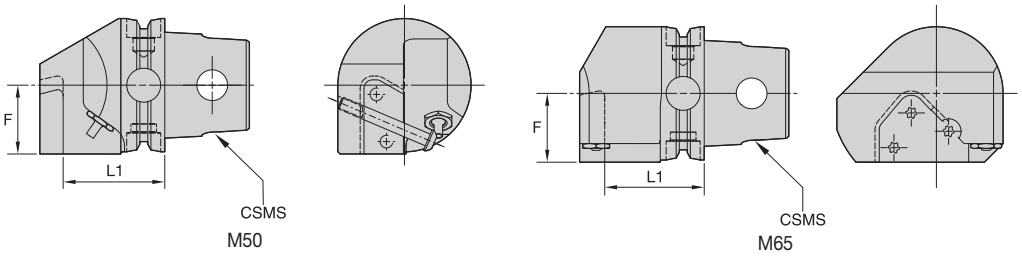


KM-KGME..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
3950266	**KM40TSKGMER50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

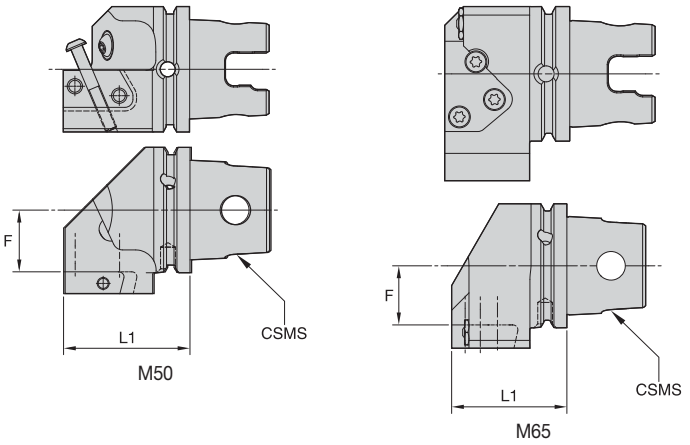
(continued)

(KM-KGME.. continued)



order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	left hand							
3950265	**KM40TSKGMEL50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

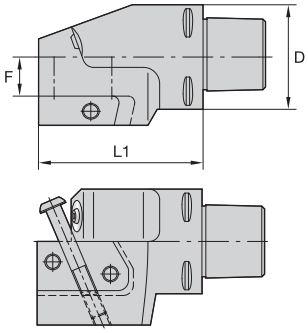
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.



KM-XMZKGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw	Torx	clamp screw	Torx
	right hand							
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–
	left hand							
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–

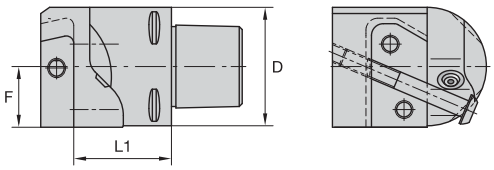
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on page D58–D59.



C-KGMS

order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756576	**C4KGMSR50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25
	left hand							
1756578	**C4KGMSL50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	63,5	15	**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 page D58–D59.



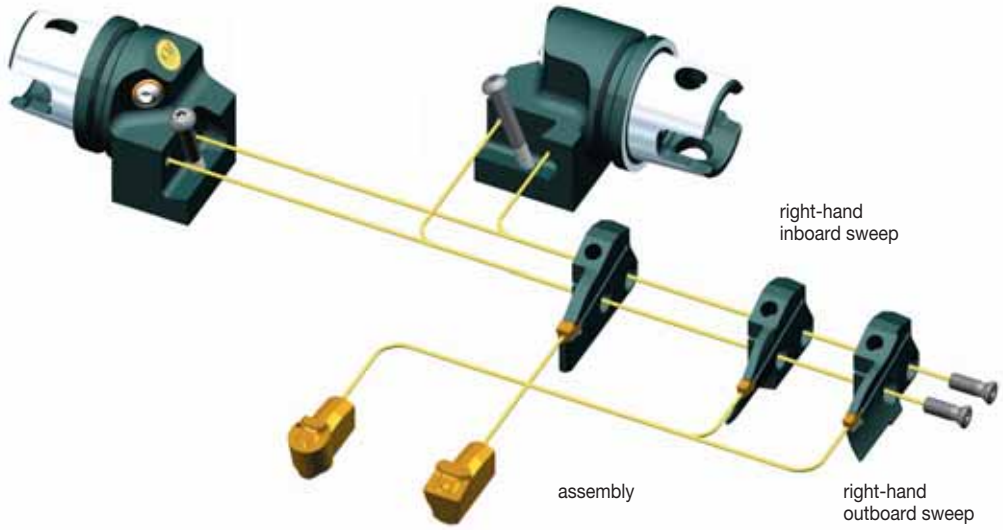
C-KGME

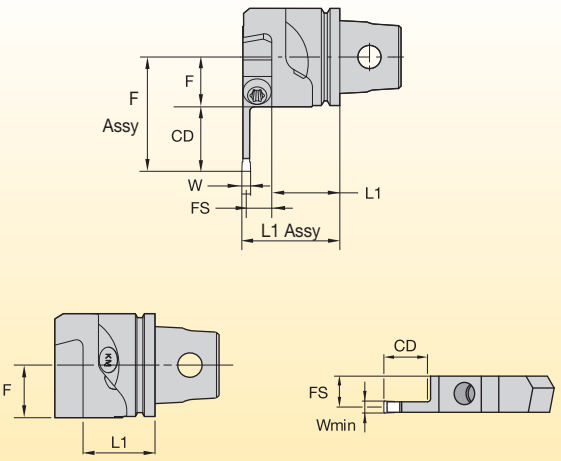
order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756579	**C4KGMER50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25
	left hand							
1756583	**C4KGMEL50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	43,0	26	**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 page D58–D59.

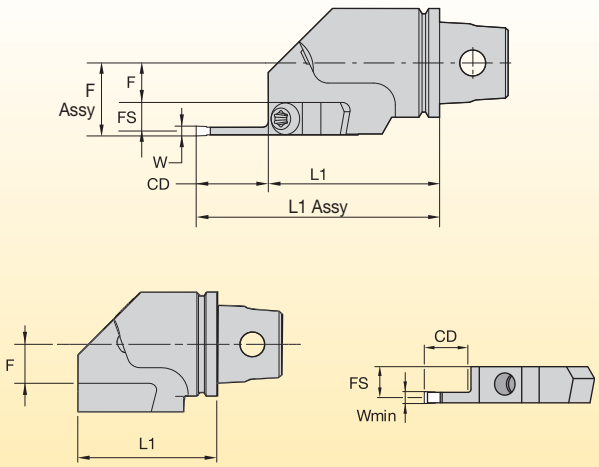
A3™ and A4™ Modular Blade Assemblies

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





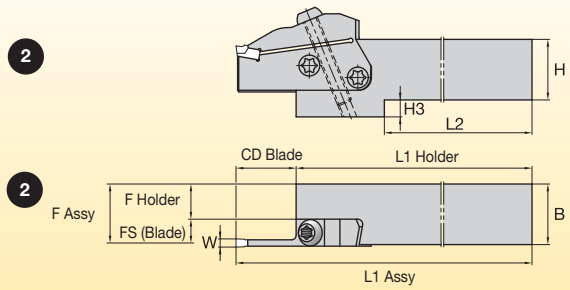
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



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

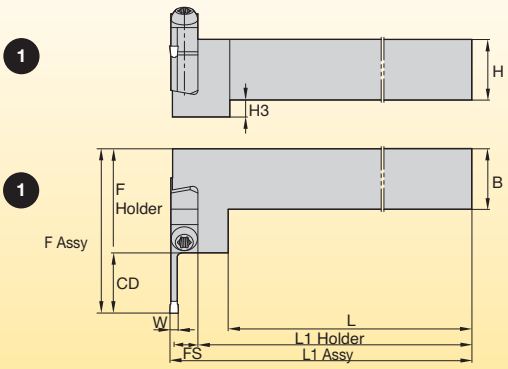
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



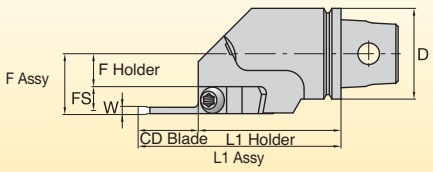
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



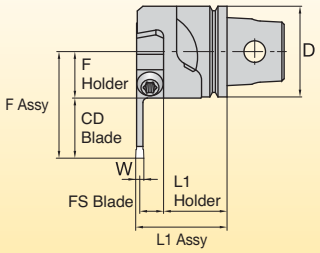
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



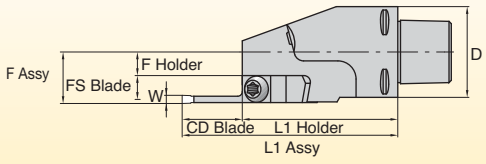
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



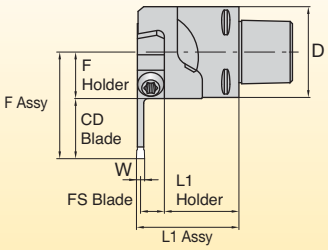
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



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

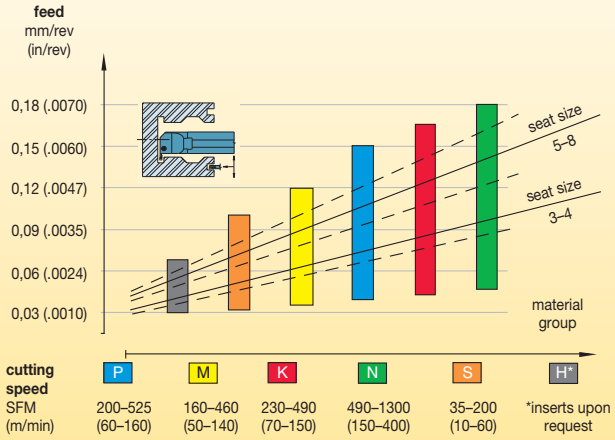
C-KGME



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

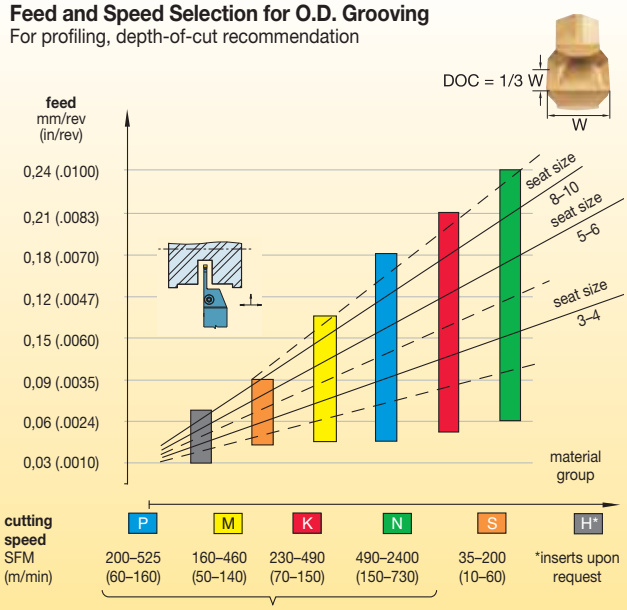
Application Guidelines

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



Feed and Speed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

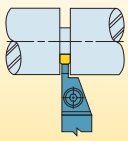


For radial grooving under stable conditions, feed can be increased by up to 50%.

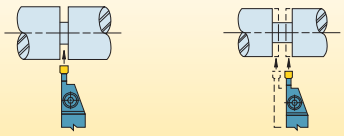
Tool Application Guidelines

- 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

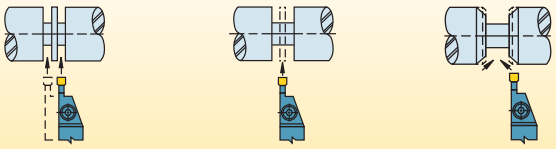


Deep Grooves Slightly Wider than the Tool



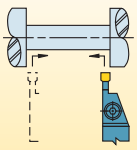
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

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.

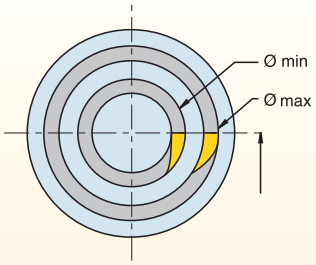
Finish Turning of the Groove/Light Profiling



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

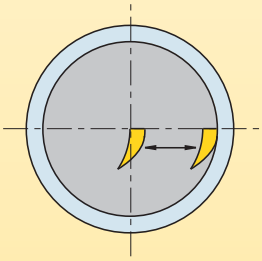
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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).

A4™ Tooling and Beyond™ Inserts for All Your O.D. and I.D. Applications

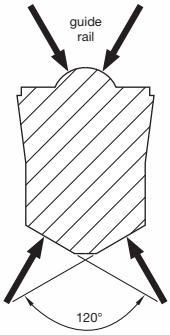
Primary Application

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

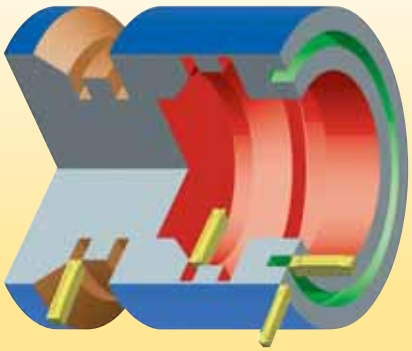
- Covers multiple applications.
- Reduces tool cost.
- Minimises machining time.

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).



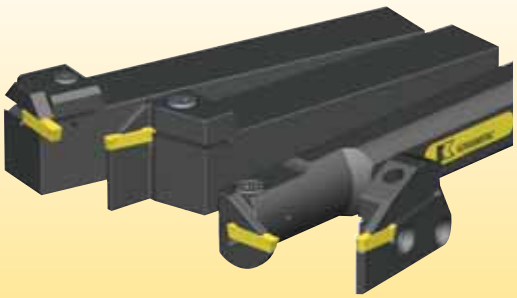
General Recommendation to Select the Insert Size

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 D82	page D94
face grooving	page D85	page D95
I.D. grooving, cut-off, and turning	page D87	—

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

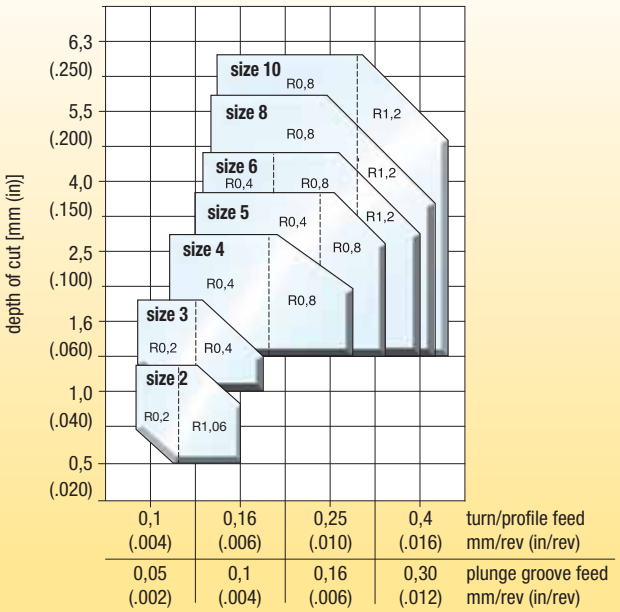
P	M	N	S	H
GMN	GUP/GMP	GUP/GMP precision ground (-E for KD 1405)	GUP/GMP precision ground	GMN

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

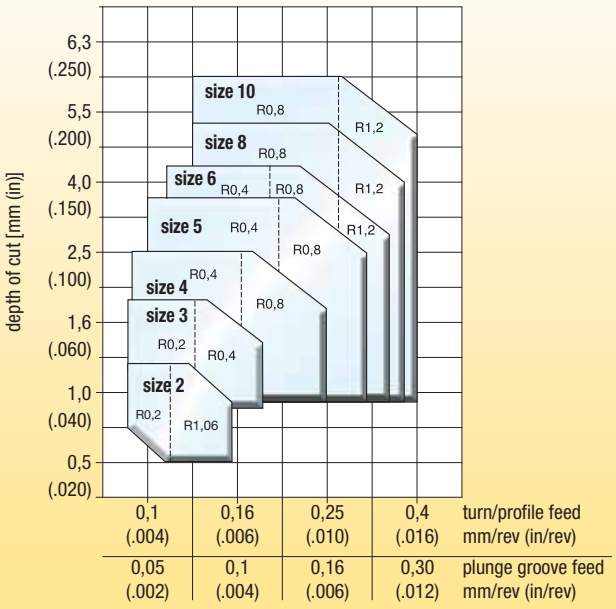
Depth of Cut and Feed Guidelines

square inserts (A4G...)			full radius inserts (A4R...)	
GMN chipbreaker	**GMP chipbreaker**	**GUP chipbreaker**	**GMN chipbreaker**	**GMP chipbreaker**
				
• Groove and turn moulded and precision ground inserts. • Stable cutting edge. • Available in metric and inch widths.	• Groove and turn inserts. • Available in moulded and precision-ground styles. • Positive rake angle. • Available in metric widths only.	• Groove and turn inserts in new Beyond™ grades. • Available in moulded 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 moulded 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	120	185	245	300	360	m/min
P	KCU10		◇					120
	KCP10				◇			275
	KCP25			◇				220
	KC5025		◇					120
	KC9110				◇			250
	KC9125			◇				200
	KT315**					◇		260

**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	90	140	185	230	275	m/min
M	KU10	◇						55
	KCU10			◇				140
	KCU25		◇					110
	KC5010			◇				135
	KC5025		◇					105
	KT315				◇			170

Non-Ferrous Metals — speed — m/min (SFM) — starting conditions ◇

material group	grade	150	300	460	610	760	900	m/min
N	KC5025		◇					365
	KC5010			◇				455
	KD1405***				◇			610

***Recommended for high-silicon aluminium alloys and abrasive nonmetallics.

High-Temperature Alloys — speed — m/min (SFM) — starting conditions ◇

material group	grade	15	35	55	75	90	140	m/min
S	KU10	◇						22
	KCU10				◇			65
	KCU25			◇				50
	KC5010				◇			60
	KC5025			◇				45
	KT315		◇					30

Hardened Materials — speed — m/min (SFM) — starting conditions ◇

material group	grade	15	35	55	75	95	115	m/min
H	KC5010		◇					30

Step 5 • Select insert and holder from catalogue page

NOTE: The insert seat size must match the seat size of your toolholder selection.

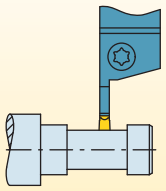
Example for A4 — Groove and Turn

Material.....low-alloyed steel
Workpiece O.D. 38mm
Groove depth 12mm
Groove width 22mm
Lightly interrupted cut

Recommendation

Insert A4G0405M04U08GMN
Grade KC9125
Insert width 4,05mm
Insert seat size 4

Toolholder A4SMR160417
Grooving depth..... 17mm
Seat size 4



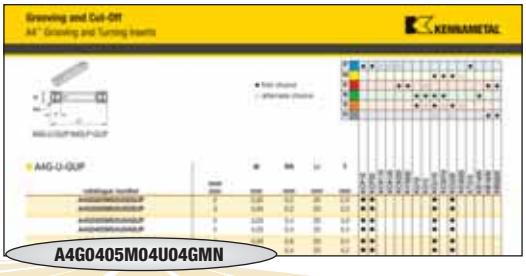
Speed: 200 m/min
Feed: 0,25 mm/rev
Plunge feed: 0,14 mm/rev

Congratulations!

You have successfully maximised your productivity by selecting the best A4 insert geometry, grade, and cutting specifications for your application!

How Do Catalogue Numbers Work?

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



Grooving and Turning Inserts

A4	G	0405	M	04	U	04	GMN
Tooling System	Insert Type	Groove Width	Unit of Measurement for Grooving Width	Seat Size	Insert Tolerance	Corner Radii	Chipbreaker Type/Edge Prep
A4 = Grooving and Turning	**G** = Square **R** = Full radius **C** = Cut-off	Expressed in 1/100mm	**M** = Metric				

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: ± 0,025mm (.001")

U = Utility moulded grooving width tolerance:

3,05-4,05: $\frac{+0{,}15\text{mm}}{-0}$

5,05-10,05: $\frac{+0{,}25\text{mm}}{-0}$

metric
01 = 0,1
02 = 0,2
04 = 0,4
08 = 0,8
12 = 1,2
full radius = 00

GMN = Grooving and turning medium machining stable cutting edge

GMP = Grooving and turning medium machining positive rake angle

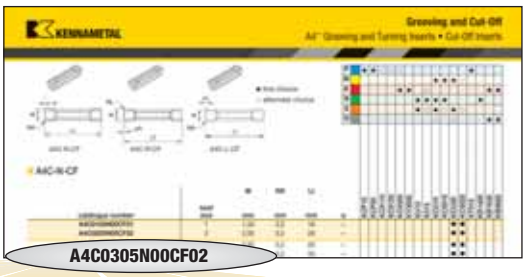
GUP = Grooving and turning high positive geometry. Especially in stainless steels and high-temp alloys

B = Flat top for special forms and applications

E = Flat top, slight honed edge

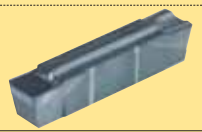
S = Negative land plus hone

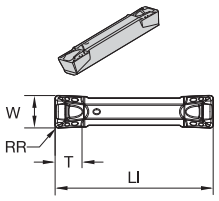
ST = Single tip



Cut-Off Inserts

A4	C	0305	N	00	CF	02
Tooling System	Insert Type	Cutting Width	Hand of Insert	Main Cutting Edge Lead Angle	Chipbreaker Type	Corner Radius
A4 = Grooving and Turning	**C** = Cut-off	Expressed in 1/100mm	**R** = Right hand **L** = Left hand **N** = Neutral	**00** = Neutral **06** = 6° **10** = 10°	**CF** = Cut-off fine positive rake	**metric** 02 = 0,2

insert type and chipbreaker designation		application range	metric widths (mm)	P	M	N	S	H
Moulded: A4G-U-GUP		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	2–10	●	●	●	●	○
Precision Ground: A4G-P-GUP		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	2–10	●	●	●	●	○
Moulded: A4G-U-GMN		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	3,05–10,05	●				●
Precision Ground: A4G-P-GMN		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	—	●	○	○	○	●
Moulded: A4G-U-GMP		Groove and Turn: • Positive rake angle. • Reduced cutting force. • Small to medium feed rates. • Utility moulded.	3,05–10,05	○	●			
Precision Ground: A4G-P-GMP		• Positive rake angle. • Precision ground cutting edge. • ± 0,025mm width tolerance.	3–10		○	●	●	
Moulded: A4R-U-GMN		Groove and Turn: • Stable cutting edge for higher feed rates. • Utility moulded.	3,05–10,05	●				●
Precision Ground: A4R-P-GMN		• Stable, precision ground cutting edge. • General grooving for specific inch widths. • ± 0,025mm width tolerance.	—	●	○	○	○	●
Precision Ground: A4R-P-GMP		Groove and Turn: • Positive rake angle. • Precision ground cutting edge. • ± 0,025mm width tolerance.	3–10		●	●	●	
Moulded: 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			●		
Moulded: 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

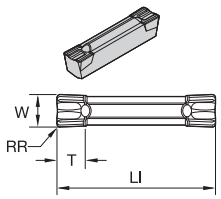
		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GUP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GUP	2	2,05	0,2	20	2,0	●	●							●		●					
A4G0305M03U02GUP	3	3,05	0,2	20	3,0	●	●							●		●					
A4G0305M03U04GUP	3	3,05	0,4	20	3,0	●	●							●		●					
A4G0405M04U04GUP	4	4,05	0,4	20	3,4	●	●							●		●					
A4G0405M04U08GUP	4	4,05	0,8	20	3,4	●	●							●		●					
A4G0505M05U04GUP	5	5,05	0,4	25	4,2	●	●							●		●					
A4G0505M05U08GUP	5	5,05	0,8	25	4,2	●	●							●		●					
A4G0605M06U04GUP	6	6,05	0,4	30	4,5	●	●							●		●					
A4G0605M06U08GUP	6	6,05	0,8	30	4,5	●	●							●		●					
A4G0605M06U12GUP	6	6,05	1,2	30	4,5	●	●							●		●					
A4G0805M08U08GUP	8	8,05	0,8	30	6,0	●	●							●		●					
A4G0805M08U12GUP	8	8,05	1,2	30	6,0	●	●							●		●					
A4G1005M10U08GUP	10	10,05	0,8	30	6,0	●	●							●		●					
A4G1005M10U12GUP	10	10,05	1,2	30	6,1	●	●							●		●					

A4G-P-GUP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GUP	2	2,00	0,2	20	1,9							●		●		●					
A4G0300M03P02GUP	3	3,00	0,2	20	2,9							●		●		●					
A4G0300M03P04GUP	3	3,00	0,4	20	2,9							●		●		●					
A4G0400M04P02GUP	4	4,00	0,2	20	3,3							●		●		●					
A4G0400M04P04GUP	4	4,00	0,4	20	3,3							●		●		●					
A4G0400M04P08GUP	4	4,00	0,8	20	3,3							●		●		●					
A4G0500M05P04GUP	5	5,00	0,4	25	4,1							●		●		●					
A4G0500M05P08GUP	5	5,00	0,8	25	4,1							●		●		●					
A4G0600M06P04GUP	6	6,00	0,4	30	4,5							●		●		●					
A4G0600M06P08GUP	6	6,00	0,8	30	4,5							●		●		●					
A4G0800M08P08GUP	8	8,00	0,8	30	6,0							●		●		●					
A4G0800M08P12GUP	8	8,00	1,2	30	6,0							●		●		●					
A4G1000M10P08GUP	10	10,00	0,8	30	6,0							●		●		●					
A4G1000M10P12GUP	10	10,00	1,2	30	6,0							●		●		●					



A4G-U-GMP/A4G-P-GMP

● first choice
○ alternate choice

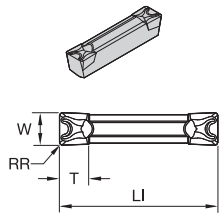
		KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
P		●	●	○	○	○								●			
M										●	●	●	○				
K						●	●		○							●	●
N								●	●	●	●				●		
S								●	○	●	○	●	○				
H										○		○				●	●

A4G-U-GMP

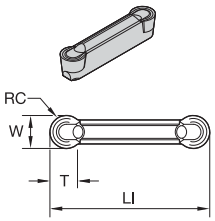
catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0205M02U02GMP	2	2,05	0,2	20	2,0			●						●	●	●	●				
A4G0255M2BU02GMP	2B	2,62	0,2	20	2,0											●	●				
A4G0305M03U02GMP	3	3,05	0,2	20	3,5			●	●					●	●	●	●	●			
A4G0305M03U04GMP	3	3,05	0,4	20	3,5			●	●					●	●	●	●	●			
A4G0405M04U04GMP	4	4,05	0,4	20	3,5			●	●					●	●	●	●	●			
A4G0405M04U08GMP	4	4,05	0,8	20	3,5			●	●					●	●	●	●	●			
A4G0505M05U04GMP	5	5,05	0,4	25	4,2			●	●					●	●	●	●				
A4G0505M05U08GMP	5	5,05	0,8	25	4,2			●	●					●	●	●	●	●			
A4G0605M06U04GMP	6	6,05	0,4	30	4,9			●	●					●	●	●	●				
A4G0605M06U08GMP	6	6,05	0,8	30	4,9			●	●					●	●	●	●	●			
A4G0605M06U12GMP	6	6,05	1,2	30	4,9									●	●		●				
A4G0805M08U08GMP	8	8,05	0,8	30	6,4			●	●							●	●				
A4G0805M08U12GMP	8	8,05	1,2	30	6,4												●				
A4G1005M10U08GMP	10	10,05	0,8	30	8,1									●	●	●	●				
A4G1005M10U12GMP	10	10,05	1,2	30	8,1				●								●				

A4G-P-GMP

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0200M02P02GMP	2	2,00	0,2	20	2,0									●	●	●	●				
A4G0250M2BP02GMP	2B	2,50	0,2	20	2,0									●	●						
A4G0300M03P02GMP	3	3,00	0,2	20	3,5								●	●	●	●	●				
A4G0300M03P04GMP	3	3,00	0,4	20	3,5								●	●	●	●	●				
A4G0400M04P02GMP	4	4,00	0,2	20	3,5								●	●	●	●	●				
A4G0400M04P04GMP	4	4,00	0,4	20	3,5								●	●	●	●	●				
A4G0400M04P08GMP	4	4,00	0,8	20	3,5									●	●	●	●				
A4G0500M05P04GMP	5	5,00	0,4	25	4,2								●	●	●	●	●				
A4G0500M05P08GMP	5	5,00	0,8	25	4,2								●	●	●	●	●				
A4G0600M06P04GMP	6	6,00	0,4	30	4,8									●	●	●	●				
A4G0600M06P08GMP	6	6,00	0,8	30	4,8									●	●	●	●				
A4G0800M08P08GMP	8	8,00	0,8	30	6,3								●	●	●	●	●				
A4G0800M08P12GMP	8	8,00	1,2	30	6,3									●	●						
A4G1000M10P08GMP	10	10,00	0,8	30	8,0								●	●	●	●	●				
A4G1000M10P12GMP	10	10,00	1,2	30	8,0									●	●						



A4G-U-GMN/A4G-P-GMN



A4R-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-GMN

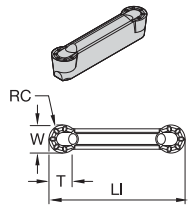
catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M02U02GMN	2	2,05	0,2	20	2,0
A4G0255M2BU02GMN	2B	2,62	0,2	20	2,0
A4G0305M03U02GMN	3	3,05	0,2	20	3,5
A4G0305M03U04GMN	3	3,05	0,4	20	3,5
A4G0405M04U04GMN	4	4,05	0,4	20	3,5
A4G0405M04U08GMN	4	4,05	0,8	20	3,5
A4G0505M05U04GMN	5	5,05	0,4	25	4,2
A4G0505M05U08GMN	5	5,05	0,8	25	4,2
A4G0605M06U04GMN	6	6,05	0,4	30	4,9
A4G0605M06U08GMN	6	6,05	0,8	30	4,9
A4G0605M06U12GMN	6	6,05	1,2	30	4,9
A4G0805M08U08GMN	8	8,05	0,8	30	6,4
A4G0805M08U12GMN	8	8,05	1,2	30	6,4
A4G1005M10U08GMN	10	10,05	0,8	30	8,1
A4G1005M10U12GMN	10	10,05	1,2	30	8,1

A4G-P-GMN

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G094I2BP05GMN	2B	2,39	0,2	20	1,9
A4G125I03P05GMN	3	3,18	0,2	20	3,4
A4G125I03P1GMN	3	3,18	0,4	20	3,4
A4G187I04P1GMN	4	4,76	0,4	20	3,5
A4G187I04P2GMN	4	4,76	0,8	20	3,5
A4G250I06P1GMN	6	6,35	0,4	30	4,7
A4G250I06P2GMN	6	6,35	0,8	30	4,7
A4G312I08P1GMN	8	7,94	0,4	30	6,2
A4G312I08P2GMN	8	7,94	0,8	30	6,2
A4G375I10P1GMN	10	9,53	0,4	30	7,9
A4G375I10P2GMN	10	9,53	0,8	30	7,9

A4R-P-GMP

catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0200M02P00GMP	2	2,00	1,0	20	1,7
A4R0300M03P00GMP	3	3,00	1,5	20	2,5
A4R0400M04P00GMP	4	4,00	2,0	20	3,4
A4R0500M05P00GMP	5	5,00	2,5	25	4,1
A4R0600M06P00GMP	6	6,00	3,0	30	4,9
A4R0800M08P00GMP	8	8,00	4,0	30	6,5
A4R1000M10P00GMP	10	10,00	5,0	30	8,1



A4R-U-GMN/A4R-P-GMN
A4R-U-GUP/A4R-U-GUP

● first choice
○ alternate choice

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

A4R-U-GMN

catalogue number	seat size	W mm	RC mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4R0205M02U00GMN	2	2,05	1,1	20	1,8			●						●	●	●	●				
A4R0305M03U00GMN	3	3,05	1,5	20	2,6			●	●					●	●	●	●				
A4R0405M04U00GMN	4	4,05	2,0	20	3,4			●	●					●	●	●	●				
A4R0505M05U00GMN	5	5,05	2,5	25	4,1			●	●					●	●	●	●				
A4R0605M06U00GMN	6	6,05	3,0	30	4,9			●	●					●	●	●	●				
A4R0805M08U00GMN	8	8,05	4,0	30	6,5			●	●					●	●	●	●				
A4R1005M10U00GMN	10	10,05	5,0	30	8,1				●					●	●	●	●				

A4R-P-GMN

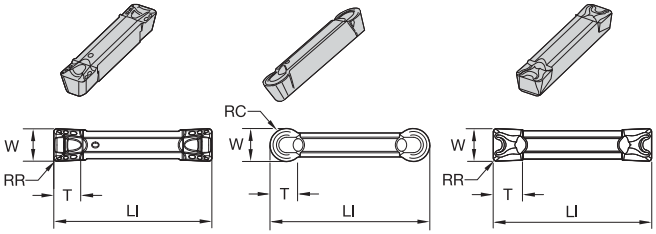
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R125I03P00GMN	3	3,18	1,6	20	2,7
A4R187I04P00GMN	4	4,76	2,4	20	3,8
A4R250I06P00GMN	6	6,35	3,2	30	5,2
A4R312I08P00GMN	8	7,94	4,0	30	6,4
A4R375I10P00GMN	10	9,53	4,8	30	7,3

A4R-U-GUP

catalogue number	seat size	W mm	RC mm	LI mm
A4R0305M03U00GUP	3	3,05	1,5	20
A4R0505M05U00GUP	5	5,05	2,5	25
A4R1005M10U00GUP	10	10,05	5,0	30

A4R-P-GUP

catalogue number	seat size	W mm	RC mm	LI mm
A4R0300M03P00GUP	3	3,00	1,5	20
A4R0400M04P00GUP	4	4,00	2,0	20
A4R0500M05P00GUP	5	5,00	2,5	25
A4R0600M06P00GUP	6	6,00	3,0	30
A4R0800M08P00GUP	8	8,00	4,0	30
A4R1000M10P00GUP	10	10,00	5,0	30
A4R125I03P00GUP	3	3,18	1,6	20
A4R187I04P00GUP	4	4,76	2,4	20
A4R250I06P00GUP	6	6,35	3,2	30
A4R312I08P00GUP	8	7,94	4,0	30
A4R375I10P00GUP	10	9,52	4,8	30



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

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M2SU02GUP	2S	2,05	0,2	20	2,0
A4G0305M3SU02GUP	3S	3,05	0,2	20	3,0
A4G0305M3SU04GUP	3S	3,05	0,4	20	3,0
A4G0405M4SU04GUP	4S	4,05	0,4	20	3,4
A4G0405M4SU08GUP	4S	4,05	0,8	20	3,4
A4G0505M5SU04GUP	5S	5,05	0,4	25	4,2
A4G0505M5SU08GUP	5S	5,05	0,8	25	4,2

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

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0200M2SP02GUP	2S	2,00	0,2	20	1,9
A4G0300M3SP02GUP	3S	3,00	0,2	20	2,9
A4G0300M3SP04GUP	3S	3,00	0,4	20	2,9
A4G0400M4SP04GUP	4S	4,00	0,4	20	3,4
A4G0400M4SP08GUP	4S	4,00	0,8	20	3,4
A4G0500M5SP04GUP	5S	5,00	0,4	25	4,1
A4G0500M5SP08GUP	5S	5,00	0,8	25	4,1

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

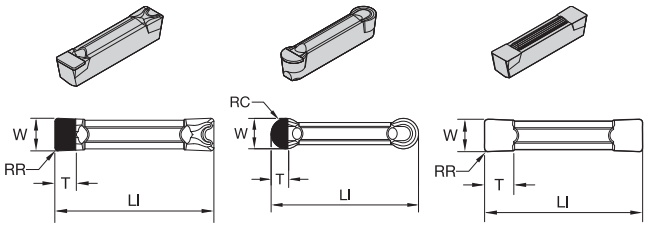
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0200M2SP00GMP	2S	2,00	1,0	20	1,7
A4R0300M3SP00GMP	3S	3,00	1,5	20	2,5
A4R0400M4SP00GMP	4S	4,00	2,0	20	3,4
A4R0500M5SP00GMP	5S	5,00	2,5	25	4,1

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

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0205M2SU02GMN	2S	2,05	0,2	20	2,0
A4G0305M3SU02GMN	3S	3,05	0,2	20	3,5
A4G0305M3SU04GMN	3S	3,05	0,4	20	3,5
A4G0405M4SU04GMN	4S	4,05	0,4	20	3,6
A4G0405M4SU08GMN	4S	4,05	0,8	20	3,6
A4G0505M5SU04GMN	5S	5,05	0,4	25	4,2
A4G0505M5SU08GMN	5S	5,05	0,8	25	4,2

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 A4G-U-B

● 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

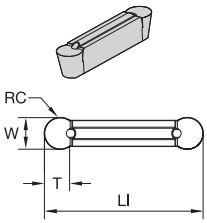
catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04E	3	3,00	0,4	20	3,5
A4G0400M04P04E	4	4,00	0,4	20	3,5
A4G0500M05P08E	5	5,00	0,8	25	4,2

A4R-P-E • PCD Grooving

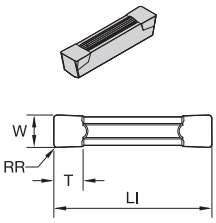
catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0500M05P00E	5	5,00	2,5	25	4,1

A4G-U-B

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0305M03U02B	3	3,05	0,2	20	3,5
A4G0405M04U04B	4	4,05	0,4	20	3,4
A4G0505M05U04B	5	5,05	0,4	25	4,2
A4G0605M06U04B	6	6,05	0,4	30	4,9
A4G0805M08U08B	8	8,05	0,8	30	6,4
A4G1005M10U08B	10	10,05	0,8	30	8,1



A4R-P-T



A4G-P-T

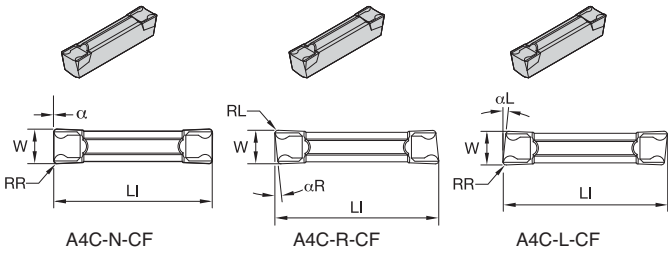
● first choice
○ alternate choice

A4G-P-T

catalogue number	seat size	W mm	RR mm	LI mm	T mm	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4G0300M03P04T01025	3	3,00	0,4	20	3,4						●										
A4G125I03P1T0425	3	3,18	0,4	20	3,4						●										
A4G0400M04P04T01025	4	4,00	0,4	20	3,4						●										
A4G187I04P2T0425	4	4,76	0,8	20	3,4						●										
A4G0500M05P08T01025	5	5,00	0,8	25	4,2						●										
A4G0600M06P08T01025	6	6,00	0,8	30	4,8						●										
A4G250I06P2T0425	6	6,35	0,8	30	4,9						●										
A4G0800M08P08T01025	8	8,00	0,8	30	6,4						●										

A4R-P-T

catalogue number	seat size	W mm	RC mm	LI mm	T mm
A4R0300M03P00T01025	3	3,00	1,5	20	2,4
A4R125I03P00T0425	3	3,18	1,6	20	2,6
A4R0400M04P00T01025	4	4,00	2,0	20	3,0
A4R187I04P00T0425	4	4,76	2,4	20	4,3
A4R0500M05P00T01025	5	5,00	2,5	25	4,1
A4R0600M06P00T01025	6	6,00	3,0	30	4,3
A4R250I06P00T0425	6	6,35	3,2	30	4,8
A4R0800M08P00T01025	8	8,00	4,0	30	6,4



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

catalogue number	seat size	W mm	RR mm	LI mm	α
A4C0155N00CF01	1	1,50	0,2	16	–
A4C0205N00CF02	2	2,05	0,2	20	–
A4C0255N00CF02	2B	2,50	0,2	20	–
A4C0305N00CF02	3	3,05	0,2	20	–
A4C0405N00CF02	4	4,05	0,2	20	–

catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155N00CF01											●	●				
A4C0205N00CF02											●	●				
A4C0255N00CF02											●	●				
A4C0305N00CF02											●	●				
A4C0405N00CF02											●	●				

A4C-R-CF

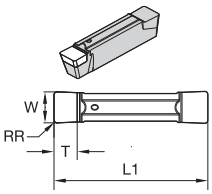
catalogue number	seat size	W mm	RL mm	LI mm	αR
A4C0155R16CF01	1	1,50	0,2	16	16.0
A4C0155R06CF01	1	1,50	0,2	16	6.0
A4C0155R10CF01	1	1,50	0,2	16	10.0
A4C0205R10CF02	2	1,99	0,2	20	10.0
A4C0205R06CF02	2	1,99	0,2	20	6.0
A4C0255R06CF02	2B	2,49	0,2	20	6.0
A4C0305R06CF02	3	3,05	0,2	20	6.0
A4C0305R10CF02	3	3,05	0,2	20	10.0
A4C0405R06CF02	4	4,05	0,2	20	6.0
A4C0405R10CF02	4	4,05	0,2	20	10.0

catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155R16CF01												●				
A4C0155R06CF01												●				
A4C0155R10CF01											●	●				
A4C0205R10CF02											●	●				
A4C0205R06CF02											●	●				
A4C0255R06CF02												●				
A4C0305R06CF02											●	●				
A4C0305R10CF02											●	●				
A4C0405R06CF02											●	●				
A4C0405R10CF02											●	●				

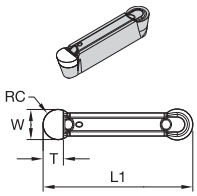
A4C-L-CF

catalogue number	seat size	W mm	RR mm	LI mm	αL
A4C0155L06CF01	1	1,50	0,2	16	6.0
A4C0205L06CF02	2	1,99	0,2	20	6.0
A4C0205L10CF02	2	1,99	0,2	20	10.0
A4C0305L06CF02	3	3,05	0,2	20	6.0
A4C0305L10CF02	3	3,05	0,2	20	10.0
A4C0405L06CF02	4	4,05	0,2	20	6.0
A4C0405L10CF02	4	4,05	0,2	20	10.0

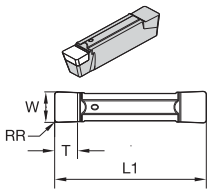
catalogue number	KCP10	KCP25	KC9110	KC9125	KC9320	KY3500	KU10	K313	KCU10	KC5010	KCU25	KC5025	KT315	KD1405	KB1630	KB5625
A4C0155L06CF01												●				
A4C0205L06CF02											●	●				
A4C0205L10CF02												●				
A4C0305L06CF02											●	●				
A4C0305L10CF02											●	●				
A4C0405L06CF02											●	●				
A4C0405L10CF02											●	●				



A4G-P-S-ST



A4R-P-E-ST



A4G-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-S-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04S02025ST	3	3,00	0,4	20	3,0
A4G0400M04P04S02025ST	4	4,00	0,4	20	3,3
A4G0500M05P08S02025ST	5	5,00	0,8	25	3,5
A4G0600M06P08S02025ST	6	6,00	0,8	30	4,0

A4R-P-E-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4R0300M03P00EST	3	3,00	–	20	2,2
A4R0400M04P00EST	4	4,00	–	20	2,9
A4R0500M05P00EST	5	5,00	–	25	3,7
A4R0600M06P00EST	6	6,00	–	30	4,4

A4G-P-E-ST

catalogue number	seat size	W mm	RR mm	LI mm	T mm
A4G0300M03P04EST	3	3,00	0,4	20	3,0
A4G0400M04P04EST	4	4,00	0,4	20	3,3
A4G0500M05P08EST	5	5,00	0,8	25	3,5
A4G0600M06P08EST	6	6,00	0,8	30	4,0

Carbide Recycling

Help preserve and protect our planet!

It's easy for your company to be environmentally conscious with the Kennametal Carbide Recycling Program.

By sending us your used carbide tools, you help preserve and protect the environment and ensure that these products are recycled responsibly. Kennametal accepts any coated or non-coated carbide items, including inserts, drills, reamers, and taps.

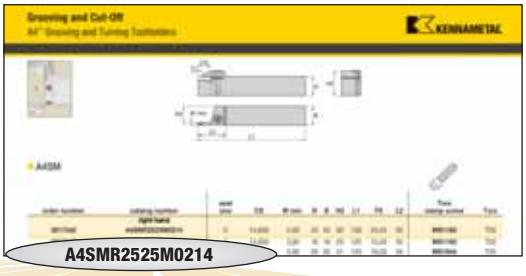
By using the Kennametal Carbide Recycling Program, you will receive:

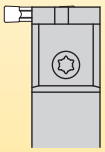
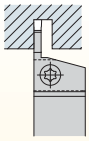
- A partner who cares about a sustainable environment.
- Easy-to-use web portal to value your used carbide.
- Access to our popular Green Box™ options for carbide collection.
- Systematic and efficient disposal of carbide materials.
- Improved profitability.

Program is not currently available in all geographical areas.
For more information, please visit **www.kennametal.com/carbiderecycling.**

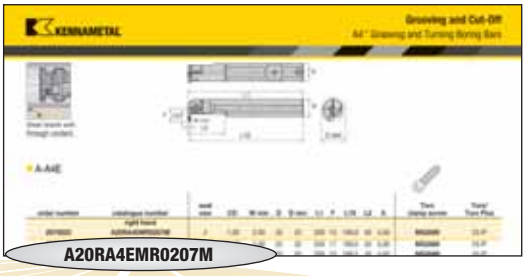
How Do Catalogue Numbers Work?

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



A4	S	M	R	2525M	02	14
Tooling System	Tool Style	Support Type	Hand of Tool	Shank Size	Seat Size	Max Grooving Depth
A4 = Grooving and Turning	 **S** = Straight  **E** = End mounted 90°	**M** = Maximum support for specific groove widths and straight clearance for unlimited workpiece diameters **E** = No steel support for face grooving	 **R** = Right hand **L** = Left hand **N** = Neutral	**metric:** Height x width in mm, letter indicates tool length according to ISO **metric tool length (mm)** K = 125 M = 150 P = 170	02 03 04 05 06 08 10	in millimetres

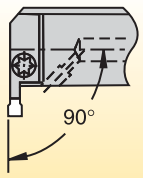
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



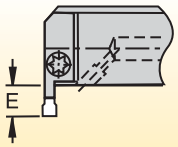
A20RA4EMR0207M

A	20	R	A4	E	M	R	02	07	M
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

M = Metric
N = Inch

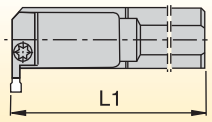


E = End mounted (90°)



conversions:

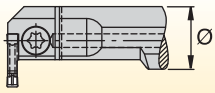
mm		inch
7mm	=	.28"
10mm	=	.39"
12mm	=	.47"
16mm	=	.63"



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

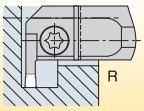
inch bars:
R = 8"
S = 10"
T = 12"

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

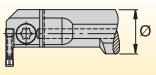


metric bars:
Bar diameter in millimetres

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

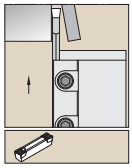


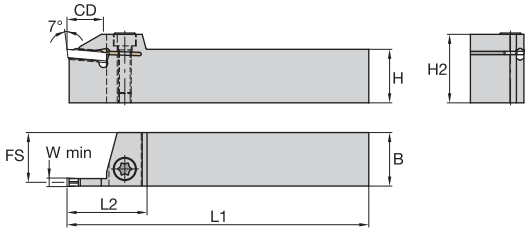
R = Right hand



L = Left hand

M = Maximum support



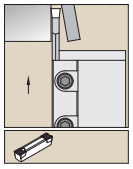


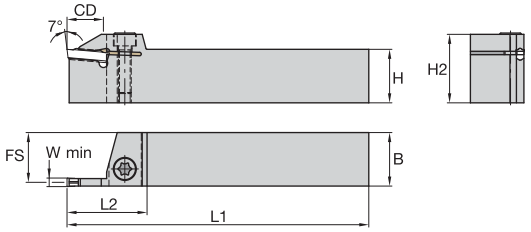
A4SM

order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	right hand											
3017340	A4SMR2525M0214	2	14,000	2,00	25	25	30	150	24,20	30	MS1160	T20
3017342	A4SMR1616K0214	2	14,000	2,00	16	16	25	125	15,20	30	MS1160	T20
2974425	A4SMR2020K0217	2	17,000	2,00	20	20	31	125	19,20	34	MS1944	T25
3017339	A4SMR2525M0217	2	17,000	2,00	25	25	31	150	24,20	34	MS1944	T25
1949635	A4SMR2020K0314	3	14,000	3,00	20	20	27	125	18,72	35	MS1595	T30
1949633	A4SMR1616K0314	3	14,000	3,00	16	16	27	125	14,72	35	MS2091	T25
1949637	A4SMR2525M0317	3	17,000	3,00	25	25	32	150	23,72	37	MS1970	T30
2503551	A4SMR2020K0317	3	17,000	3,00	20	20	32	125	18,70	37	MS1970	T30
2503557	A4SMR2016K0317	3	17,000	3,00	20	16	32	125	14,70	37	MS1970	T30
1949639	A4SMR2020K0414	4	14,000	4,00	20	20	27	125	18,22	35	MS1595	T30
1949643	A4SMR3225P0417	4	17,000	4,00	32	25	40	170	23,22	37	MS1970	T30
2503553	A4SMR2020K0417	4	17,000	4,00	20	20	32	125	18,20	37	MS1970	T30
1949641	A4SMR2525M0417	4	17,000	4,00	25	25	32	150	23,22	37	MS1970	T30
2503559	A4SMR2016K0417	4	17,000	4,00	20	16	32	125	14,20	37	MS1970	T30
1949645	A4SMR2020K0519	5	19,000	5,00	20	20	28	125	17,72	40	MS1595	T30
1949647	A4SMR2525M0520	5	20,000	5,00	25	25	33	150	22,72	40	MS1970	T30
1949649	A4SMR3225P0522	5	22,000	5,00	32	25	40	170	22,72	42	MS1970	T30
2503555	A4SMR2020K0620	6	20,000	6,00	20	20	33	125	17,30	40	MS1970	T30
2245484	A4SMR2525M0620	6	20,000	6,00	25	25	33	150	22,30	40	MS1970	T30
2263089	A4SMR3225P0626	6	26,000	6,00	32	25	40	170	22,30	45	MS1970	T30
2245485	A4SMR2525M0820	8	20,000	8,00	25	25	34	150	21,40	43	MS1490	T45
2263091	A4SMR3225P0826	8	26,000	8,00	32	25	41	170	21,40	47	MS1490	T45
2263173	A4SMR3225P1026	10	26,000	10,00	32	25	41	170	20,80	47	MS1490	T45
3017341	A4SMR2020K0214	2	14,000	–	20	20	25	125	19,20	30	MS1160	T20

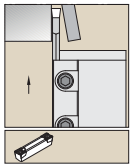
(continued)

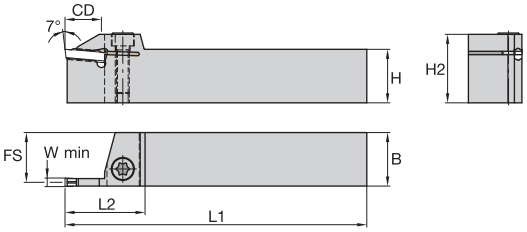
(A4SM continued)





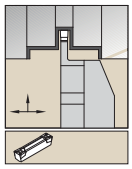
order number	catalogue number	seat size	CD	W min	H	B	H2	L1	FS	L2	Torx clamp screw	Torx
	left hand											
3017338	**A4SML1616K0214**	2	14,000	2,00	16	16	25	125	15,20	30	**MS1160**	T20
3017335	**A4SML2525M0214**	2	14,000	2,00	25	25	30	150	24,20	30	**MS1160**	T20
3017337	**A4SML2020K0217**	2	17,000	2,00	20	20	31	125	19,20	34	**MS1944**	T25
3017334	**A4SML2525M0217**	2	17,000	2,00	25	25	31	150	24,20	34	**MS1944**	T25
1949636	**A4SML2020K0314**	3	14,000	3,00	20	20	27	125	18,72	35	**MS1595**	T30
1949634	**A4SML1616K0314**	3	14,000	3,00	16	16	27	125	14,72	35	**MS2091**	T25
2503550	**A4SML2020K0317**	3	17,000	3,00	20	20	32	125	18,70	37	**MS1970**	T30
1949638	**A4SML2525M0317**	3	17,000	3,00	25	25	32	150	23,72	37	**MS1970**	T30
2503556	**A4SML2016K0317**	3	17,000	3,00	20	16	32	125	14,70	37	**MS1970**	T30
1949640	**A4SML2020K0414**	4	14,000	4,00	20	20	27	125	18,22	35	**MS1595**	T30
1949642	**A4SML2525M0417**	4	17,000	4,00	25	25	32	150	23,22	37	**MS1970**	T30
2503552	**A4SML2020K0417**	4	17,000	4,00	20	20	32	125	18,20	37	**MS1970**	T30
2503558	**A4SML2016K0417**	4	17,000	4,00	20	16	32	125	14,20	37	**MS1970**	T30
1949644	**A4SML3225P0417**	4	17,000	4,00	32	25	40	170	23,22	37	**MS1970**	T30
1949646	**A4SML2020K0519**	5	19,000	5,00	20	20	28	125	17,72	40	**MS1595**	T30
1949648	**A4SML2525M0520**	5	20,000	5,00	25	25	33	150	22,72	40	**MS1970**	T30
1949650	**A4SML3225P0522**	5	22,000	5,00	32	25	40	170	22,72	42	**MS1970**	T30
2245486	**A4SML2525M0620**	6	20,000	6,00	25	25	33	150	22,30	40	**MS1970**	T30
2503554	**A4SML2020K0620**	6	20,000	6,00	20	20	33	125	17,30	40	**MS1970**	T30
2263090	**A4SML3225P0626**	6	26,000	6,00	32	25	40	170	22,30	45	**MS1970**	T30
2245487	**A4SML2525M0820**	8	20,000	8,00	25	25	34	150	21,40	43	**MS1490**	T45
2263092	**A4SML3225P0826**	8	26,000	8,00	32	25	41	170	21,40	47	**MS1490**	T45
2263174	**A4SML3225P1026**	10	26,000	10,00	32	25	41	170	20,80	47	**MS1490**	T45
3017336	**A4SML2020K0214**	2	14,000	–	20	20	25	125	19,20	30	**MS1160**	T20

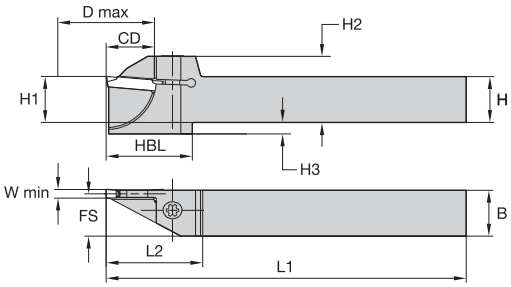




A4SM

order number	catalogue 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

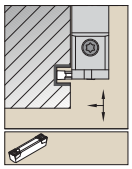


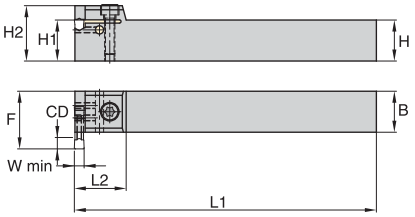


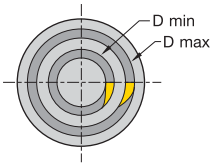
left-hand tool

A4SC

catalogue number	seat size	D max	CD	W min	H	B	FS	L1	L2	HBL	H1	H2	H3	clamp screw	Torx/ Torx Plus
right hand															
A4SCR1010K0113	1	27	13,5	1,50	10	10	9	125	25,00	22,0	10	21	6	**MS1156**	T15
A4SCR1212K0113	1	27	13,5	1,50	12	12	11	125	25,00	22,0	12	21	4	**MS1156**	T15
A4SCR1616K0113	1	27	13,5	1,50	16	16	15	125	25,00	–	16	21	–	**MS1156**	T15
A4SCR2020K0113	1	27	13,5	1,50	20	20	19	125	25,00	–	20	25	–	**MS1156**	T15
A4SCR1212K0214	2	28	14,0	2,00	12	12	11	125	28,00	23,0	12	21	4	**MS1160**	T20
A4SCR1616K0217	2	34	17,0	2,00	16	16	15	125	31,00	26,0	16	26	4	**MS1944**	T25
A4SCR1212K0314	3	28	14,0	3,00	12	12	11	125	30,00	25,0	12	23	4	**MS2091**	25 IP
A4SCR1616K0317	3	34	17,0	3,00	16	16	15	125	33,00	30,0	16	27	4	**MS2091**	25 IP
left hand															
A4SCL1010K0113	1	27	13,5	1,50	10	10	9	125	25,00	22,0	10	21	6	**MS1156**	T15
A4SCL1212K0113	1	27	13,5	1,50	12	12	11	125	25,00	22,0	12	21	4	**MS1156**	T15
A4SCL2020K0113	1	27	13,5	1,50	20	20	19	125	25,00	–	20	25	–	**MS1156**	T15
A4SCL1616K0113	1.5	27	13,5	1,50	16	16	15	125	25,00	–	16	21	–	**MS1156**	T15
A4SCL1212K0214	2	28	14,0	2,00	12	12	11	125	28,00	23,0	12	21	4	**MS1160**	T20
A4SCL1616K0217	2	34	17,0	2,00	16	16	15	125	31,00	26,0	16	26	4	**MS1944**	T25
A4SCL1212K0314	3	28	14,0	3,00	12	12	11	125	30,00	25,0	12	23	4	**MS2091**	25 IP
A4SCL1616K0317	3	34	17,0	3,00	16	16	15	125	33,00	30,0	16	27	4	**MS2091**	25 IP





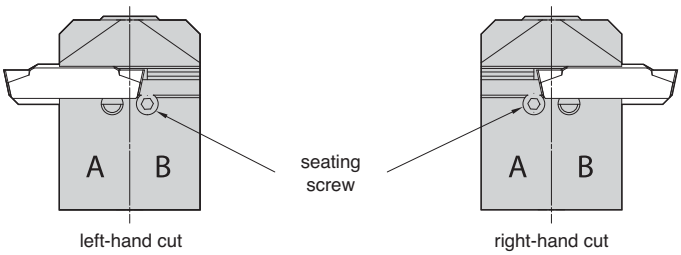


A4EN

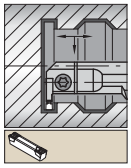
order number	catalogue number	seat size	CD	W min	D min	H	H1	B	H2	L1	F	L2	Torx clamp screw	Torx	hex seating screw	hex (mm)
2414136	**A4ENN2020K0305**	3	5	3,00	70	20	20	20	27	125,0	25,4	25	**MS2091**	T25	**MS2090**	1.5 mm
2414137	**A4ENN2525M0305**	3	5	3,00	70	25	25	25	32	150,0	30,4	25	**MS2091**	T25	**MS2090**	1.5 mm
1949652	**A4ENN2525M0407**	4	7	4,00	90	25	25	25	32	150,0	33,1	25	**MS2091**	T25	**MS2090**	1.5 mm
1949651	**A4ENN2020K0407**	4	7	4,00	90	20	20	20	27	125,0	27,9	25	**MS2091**	T25	**MS2090**	1.5 mm
1949654	**A4ENN2525M0509**	5	9	5,00	120	25	25	25	33	150,0	35,1	34	**MS1970**	T30	**193.297**	1.5 mm
2503545	**A4ENN3232P0611**	6	11	6,00	120	32	32	32	40	170,0	43,4	34	**MS1970**	T30	**193.297**	2 mm
2503543	**A4ENN2020K0611**	6	11	6,00	120	20	20	20	28	125,0	35,4	34	**MS1595**	T30	**193.297**	2 mm
2503544	**A4ENN2525M0611**	6	11	6,00	120	25	25	25	33	150,0	38,9	34	**MS1970**	T30	**193.297**	2 mm
2503547	**A4ENN3232P0811**	8	11	8,00	120	32	32	32	42	170,0	43,4	40	**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.

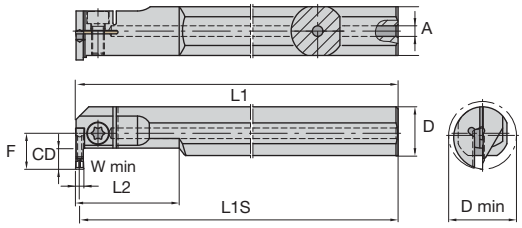
A4EN Insert Mounting



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.

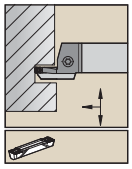


Steel shank with through coolant.

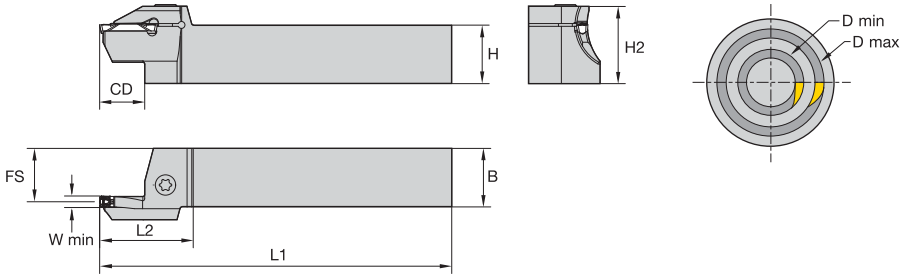


A-A4E

order number	catalogue number	seat size	CD	W min	D	D min	L1	F	L1S	L2	A	Torx clamp screw	Torx/ Torx Plus
	right hand												
2979223	A20RA4EMR0207M	2	7,00	2,00	20	25	200	13	199,0	40	4,00	MS2089	25 IP
2979225	A25RA4EMR0210M	2	10,00	2,00	25	32	200	17	199,0	50	5,00	MS2089	25 IP
1949655	A20RA4EMR0307M	3	7,00	3,00	20	25	200	13	198,5	40	4,00	MS2089	25 IP
1949657	A25RA4EMR0310M	3	10,00	3,00	25	32	200	17	198,5	50	5,00	MS1595	T30
1949659	A32SA4EMR0312M	3	12,00	3,00	32	40	250	22	248,5	64	6,00	MS1595	T30
1949661	A20RA4EMR0407M	4	7,00	4,00	20	25	200	13	198,0	40	4,00	MS2089	25 IP
1949663	A25RA4EMR0410M	4	10,00	4,00	25	32	200	17	198,0	50	5,00	MS1595	T30
1949665	A32SA4EMR0412M	4	12,00	4,00	32	40	250	22	248,0	64	6,00	MS1595	T30
1949667	A40TA4EMR0416M	4	16,00	4,00	40	52	300	30	298,0	80	6,00	MS1970	T30
1949669	A32SA4EMR0516M	5	16,00	5,00	32	44	250	26	247,5	64	6,00	MS1595	T30
1949671	A40TA4EMR0516M	5	16,00	5,00	40	52	300	30	297,5	80	6,00	MS1970	T30
2263197	A40TA4EMR0616M	6	16,00	6,00	40	52	300	30	297,0	80	6,00	MS1970	T30
	left hand												
2979192	A20RA4EML0207M	2	7,00	2,00	20	25	200	13	199,0	40	4,00	MS2089	25 IP
2979224	A25RA4EML0210M	2	10,00	2,00	25	32	200	17	199,0	50	5,00	MS2089	25 IP
1949656	A20RA4EML0307M	3	7,00	3,00	20	25	200	13	198,5	40	4,00	MS2089	25 IP
1949658	A25RA4EML0310M	3	10,00	3,00	25	32	200	17	198,5	50	5,00	MS1595	T30
1949660	A32SA4EML0312M	3	12,00	3,00	32	40	250	22	248,5	64	6,00	MS1595	T30
1949662	A20RA4EML0407M	4	7,00	4,00	20	25	200	13	198,0	40	4,00	MS2089	25 IP
1949664	A25RA4EML0410M	4	10,00	4,00	25	32	200	17	198,0	50	5,00	MS1595	T30
1949666	A32SA4EML0412M	4	12,00	4,00	32	40	250	22	248,0	64	6,00	MS1595	T30
1949668	A40TA4EML0416M	4	16,00	4,00	40	52	300	30	298,0	80	6,00	MS1970	T30
1949670	A32SA4EML0516M	5	16,00	5,00	32	44	250	26	247,5	64	6,00	MS1595	T30
1949672	A40TA4EML0516M	5	16,00	5,00	40	52	300	30	297,5	80	6,00	MS1970	T30
2263198	A40TA4EML0616M	6	16,00	6,00	40	52	300	30	297,0	80	6,00	MS1970	T30

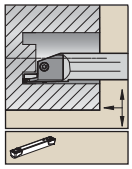


Right hand shown.

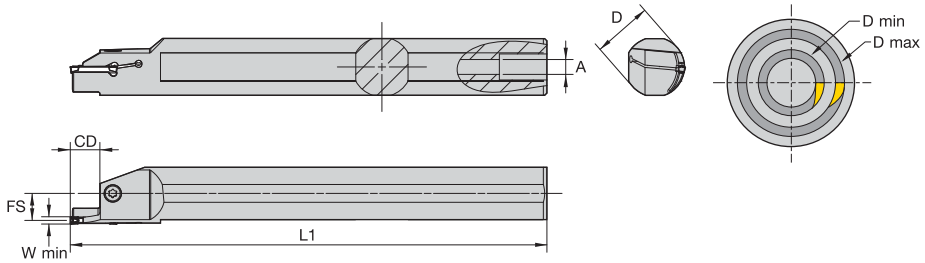


A4SB Outboard Sweep

order number	catalogue 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



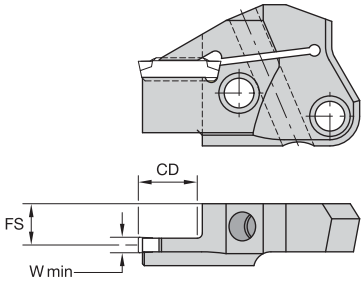
Right hand shown.

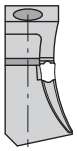


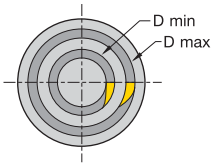
A4SS Inboard Sweep

order number	catalogue 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.







A4M-SB Outboard Sweep

order number	catalogue 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

A4™ Tooling with Beyond™ Insert Technology

A4 Small-Diameter Face Grooving

- New smaller diameter face grooving range from 16–58mm (.63–2.28") with 2–5mm (.08–.20") insert widths and 14mm (.55") face groove depth capabilities.
- Available for both O.D. and I.D. applications with both modular and integral steel designs.
- Modified A4 insert design increases stability and clearance in small diameter face grooving ranges.
- Available A4 insert geometries include the GMN, GMP, and new GUP insert design.

Visit **www.kennametal.com** or contact your local Authorised Kennametal Distributor.

www.kennametal.com

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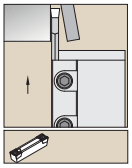
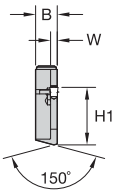
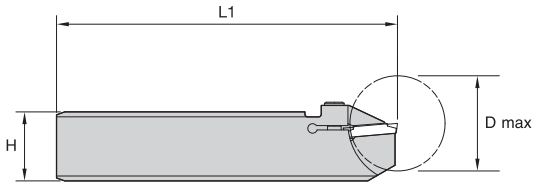
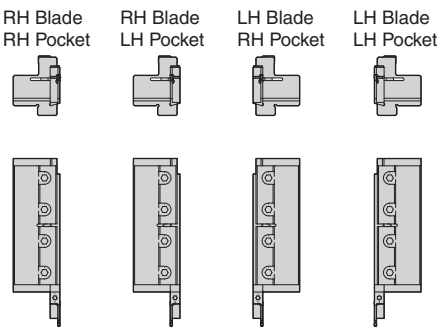


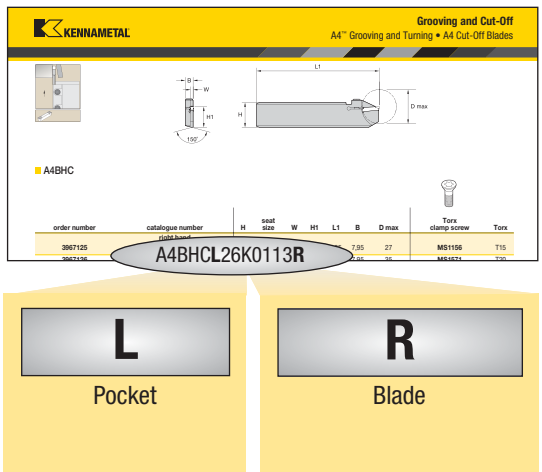




A4BHC

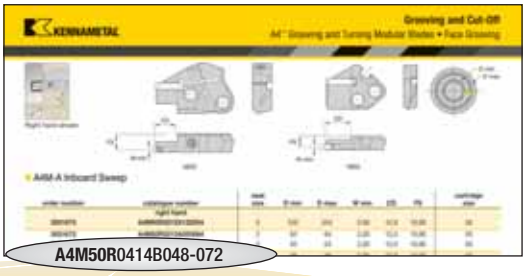
order number	catalogue number	H	seat size	W	H1	L1	B	D max	Torx clamp screw	Torx
	right hand									
3967125	A4BHCL26K0113R	26	1	1,5	21,4	125	7,95	27	MS1156	T15
3967126	A4BHCL26K0217R	26	2	2,0	21,4	125	7,95	35	MS1571	T20
3967127	A4BHCL26K0317R	26	3	3,0	21,4	125	7,95	35	MS1571	T20
3967122	A4BHCL32K0113R	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



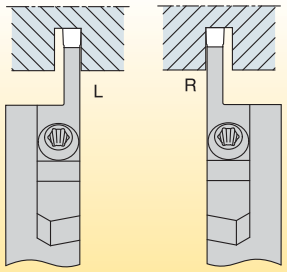


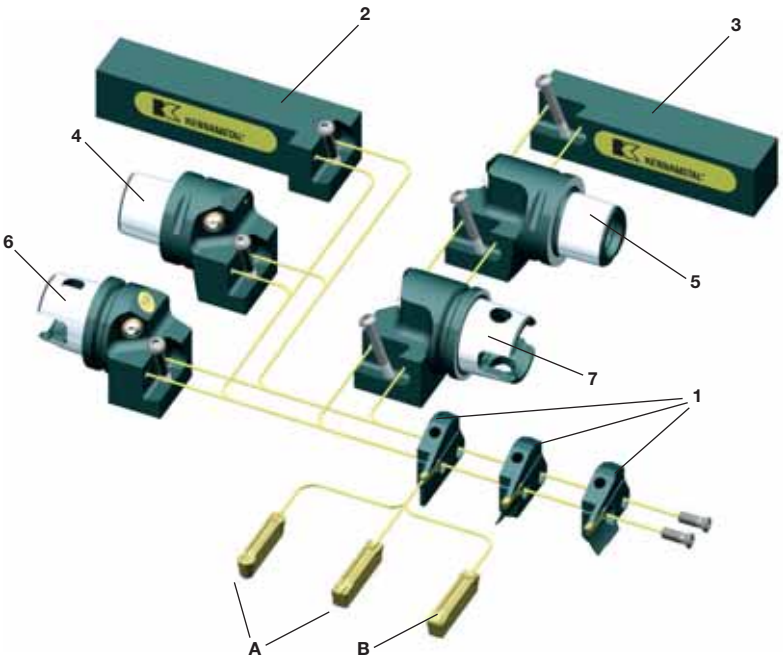
How Do Catalogue Numbers Work?

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



A4M	50	R
A4 Tooling System	Modular System Size	Hand of Tool





Legend		page(s)
A	A4 Grooving and Turning Inserts	D64–D78
B	A4 Cut-Off Inserts	D77
1	O.D. and Face Grooving Blades	D94–D98
2	KGME Toolholder	D103
3	KGMS Toolholder	D102
4	Capto® KGME Cutting Unit	D107
5	Capto KGMS Cutting Unit	D107
6	KM™ KGME Cutting Unit	D104–D106
7	KM KGMS Cutting Unit	D105

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 utilising the Coromant Capto coupling.

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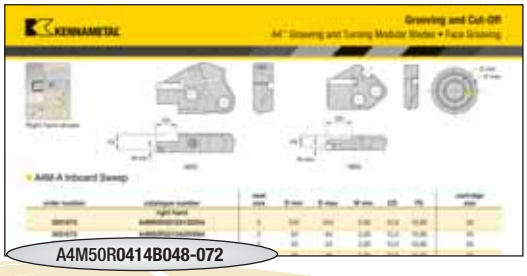
By referencing this easy-to-use guide, you can identify the correct product to meet your needs.



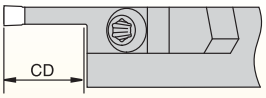
04

Seat Size

pocket seat size	cutting width (mm)
02	2,00–2,62
2B	2,39–2,62
03	3,0–3,05
04	4,0–4,05
05	5,0–5,05
06	6,0–6,05
08	8,0–8,05
10	10,0–10,05

14

Maximum Groove Depth

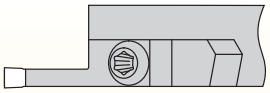


conversions:

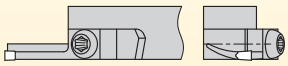
mm		inch
14mm	=	.55"
19mm	=	.75"
20mm	=	.79"
26mm	=	1.02"

B

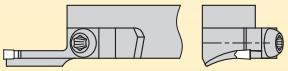
Tool Style



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



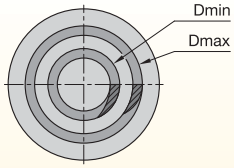
A = Inboard sweep face grooving toolholder



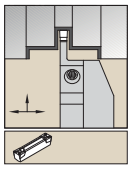
B = Outboard sweep face grooving toolholder

048-072

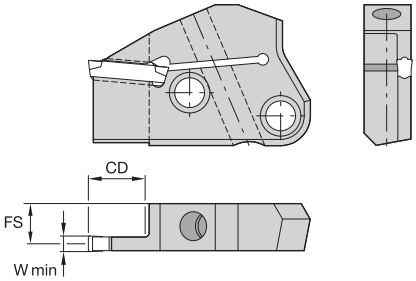
Face Grooving Diameter Range



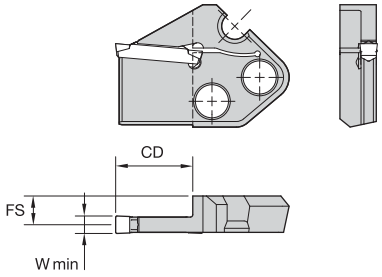
diameters are min and max for outer face groove dia. 999 = unlimited D max



Right hand shown.



M50

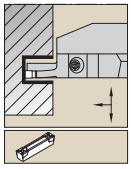


M65

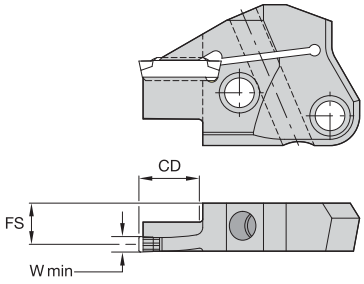
A4M-M

order number	catalogue number	seat size	CD	W min	FS	blade size
	right hand					
3051624	**A4M50R0214M**	2	14,0	2,00	10,87	50
1989348	**A4M50R0314M**	3	14,0	3,00	10,43	50
1989350	**A4M50R0414M**	4	14,0	4,00	9,93	50
1989352	**A4M50R0519M**	5	19,0	5,00	9,43	50
3557114	**A4M65R0620M**	6	20,0	6,00	9,88	65
3557116	**A4M65R0626M**	6	26,0	6,00	9,88	65
3557118	**A4M65R0820M**	8	20,0	8,00	9,00	65
3557120	**A4M65R0826M**	8	26,0	8,00	9,00	65
3557122	**A4M65R1020M**	10	20,0	10,00	8,35	65
3557124	**A4M65R1026M**	10	26,0	10,00	8,35	65
	left hand					
3022625	**A4M50L0214M**	2	14,0	2,00	10,87	50
3051623	**A4M50L2B14M**	2B	14,0	2,50	10,70	50
1989347	**A4M50L0314M**	3	14,0	3,00	10,43	50
1989349	**A4M50L0414M**	4	14,0	4,00	9,93	50
1989351	**A4M50L0519M**	5	19,0	5,00	9,43	50
3557115	**A4M65L0620M**	6	20,0	6,00	9,88	65
3557117	**A4M65L0626M**	6	26,0	6,00	9,88	65
3557119	**A4M65L0820M**	8	20,0	8,00	9,00	65
3557121	**A4M65L0826M**	8	26,0	8,00	9,00	65
3557123	**A4M65L1020M**	10	20,0	10,00	8,35	65
3557125	**A4M65L1026M**	10	26,0	10,00	8,35	65

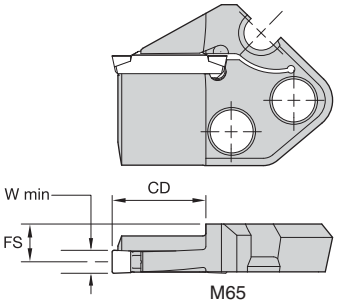
NOTE: Seat size 2B only accepts 2B inserts. Seat size 2 accepts size 2 or 2B inserts.



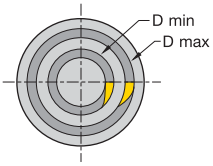
Right hand shown.



M50



M65

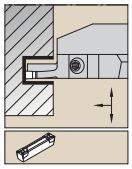


A4M-A Inboard Sweep

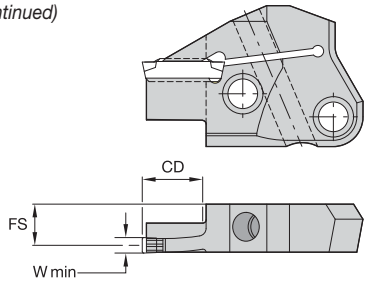
order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3051675	A4M50R0212A120254	2	120	254	2,00	12,0	10,90	50
3051672	A4M50R0212A050064	2	50	64	2,00	12,0	10,90	50
3051671	A4M50R0212A042054	2	42	54	2,00	12,0	10,90	50
3051670	A4M50R0212A036046	2	36	46	2,00	12,0	10,90	50
3051676	A4M50R0212A250999	2	250	–	2,00	12,0	10,90	50
3051673	A4M50R0212A060084	2	60	84	2,00	12,0	10,90	50
3051674	A4M50R0212A080124	2	80	124	2,00	12,0	10,90	50
2542521	A4M50R0314A090160	3	90	160	3,00	14,0	10,50	50
2542518	A4M50R0314A042058	3	42	58	3,00	14,0	10,50	50
2542522	A4M50R0314A130300	3	130	300	3,00	14,0	10,50	50
2542517	A4M50R0314A036048	3	36	48	3,00	14,0	10,50	50
2542523	A4M50R0314A290999	3	290	–	3,00	14,0	10,50	50
2542520	A4M50R0314A068100	3	68	100	3,00	14,0	10,50	50
2542519	A4M50R0314A052074	3	52	74	3,00	14,0	10,50	50
2542534	A4M50R0414A132300	4	132	300	4,00	14,0	10,00	50
2542535	A4M50R0414A290999	4	290	–	4,00	14,0	10,00	50
2542532	A4M50R0414A064100	4	64	100	4,00	14,0	10,00	50
2542531	A4M50R0414A048072	4	48	72	4,00	14,0	10,00	50
2542533	A4M50R0414A092150	4	92	150	4,00	14,0	10,00	50
2542541	A4M50R0519A058094	5	58	94	5,00	19,0	9,50	50
2542543	A4M50R0519A120300	5	120	300	5,00	19,0	9,50	50
2542544	A4M50R0519A250999	5	250	–	5,00	19,0	9,50	50
2542542	A4M50R0519A080136	5	80	136	5,00	19,0	9,50	50
3557131	A4M65R0624A070-112	6	70	112	6,00	24,0	9,88	65
3557165	A4M65R0624A200-999	6	200	999	6,00	24,0	9,88	65
3557163	A4M65R0624A100-212	6	100	212	6,00	24,0	9,88	65
3557169	A4M65R0824A184-999	8	184	999	8,00	24,0	9,00	65
3557167	A4M65R0824A090-200	8	90	200	8,00	24,0	9,00	65
3557173	A4M65R1024A200-999	10	200	999	10,00	24,0	8,35	65
3557171	A4M65R1024A100-220	10	100	220	10,00	24,0	8,35	65

(continued)

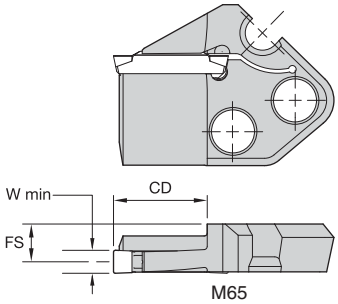
(A4M-A Inboard Sweep continued)



Right hand shown.



M50



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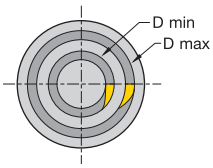
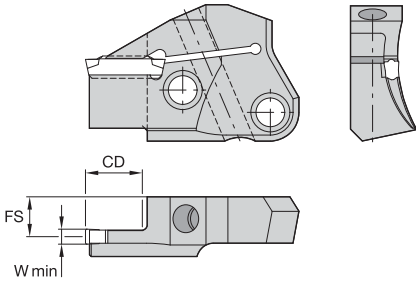
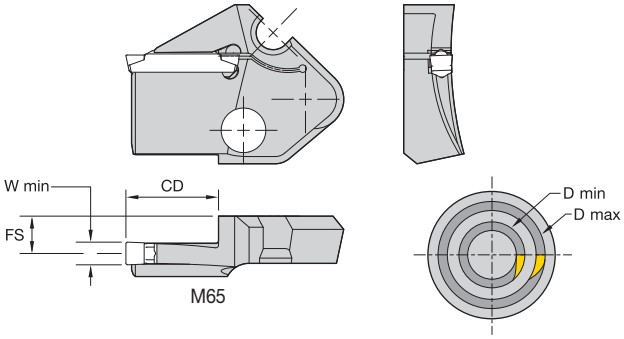


order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3051629	**A4M50L0212A060084**	2	60	84	2,00	12,0	10,90	50
3051626	**A4M50L0212A036046**	2	36	46	2,00	12,0	10,90	50
3051632	**A4M50L0212A250999**	2	250	–	2,00	12,0	10,90	50
3051627	**A4M50L0212A042054**	2	42	54	2,00	12,0	10,90	50
3051631	**A4M50L0212A120254**	2	120	254	2,00	12,0	10,90	50
3051628	**A4M50L0212A050064**	2	50	64	2,00	12,0	10,90	50
3051630	**A4M50L0212A080124**	2	80	124	2,00	12,0	10,90	50
2542524	**A4M50L0314A036048**	3	36	48	3,00	14,0	10,50	50
2542527	**A4M50L0314A068100**	3	68	100	3,00	14,0	10,50	50
2542529	**A4M50L0314A130300**	3	130	300	3,00	14,0	10,50	50
2542528	**A4M50L0314A090160**	3	90	160	3,00	14,0	10,50	50
2542530	**A4M50L0314A290999**	3	290	–	3,00	14,0	10,50	50
2542525	**A4M50L0314A042058**	3	42	58	3,00	14,0	10,50	50
2542526	**A4M50L0314A052074**	3	52	74	3,00	14,0	10,50	50
2542540	**A4M50L0414A290999**	4	290	–	4,00	14,0	10,00	50
2542537	**A4M50L0414A064100**	4	64	100	4,00	14,0	10,00	50
2542539	**A4M50L0414A132300**	4	132	300	4,00	14,0	10,00	50
2542538	**A4M50L0414A092150**	4	92	150	4,00	14,0	10,00	50
2542536	**A4M50L0414A048072**	4	48	72	4,00	14,0	10,00	50
2542546	**A4M50L0519A080136**	5	80	136	5,00	19,0	9,50	50
2542545	**A4M50L0519A058094**	5	58	94	5,00	19,0	9,50	50
2542547	**A4M50L0519A120300**	5	120	300	5,00	19,0	9,50	50
2542548	**A4M50L0519A250999**	5	250	–	5,00	19,0	9,50	50
3557164	**A4M65L0624A100-212**	6	100	212	6,00	24,0	9,88	65
3557166	**A4M65L0624A200-999**	6	200	999	6,00	24,0	9,88	65
3557132	**A4M65L0624A070-112**	6	70	112	6,00	24,0	9,88	65
3557170	**A4M65L0824A184-999**	8	184	999	8,00	24,0	9,00	65
3557168	**A4M65L0824A090-200**	8	90	200	8,00	24,0	9,00	65
3557172	**A4M65L1024A100-220**	10	100	220	10,00	24,0	8,35	65
3557174	**A4M65L1024A200-999**	10	200	999	10,00	24,0	8,35	65

Right hand shown.



M50



M65

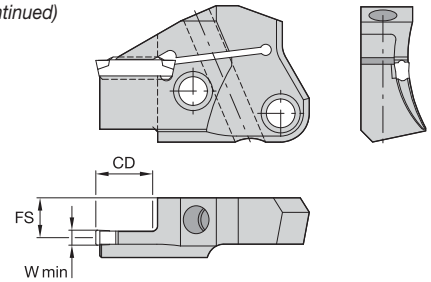
A4M-B Outboard Sweep

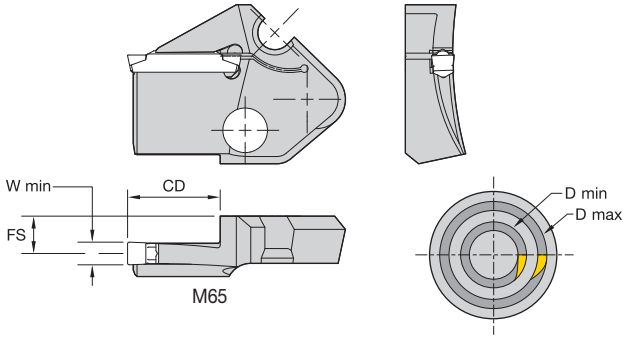
order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	right hand							
3867457	A4M50R2S12B016020	2S	16	20	2,00	12,0	10,90	50
3867458	A4M50R2S12B020025	2S	20	25	2,00	12,0	10,90	50
3867459	A4M50R2S12B025036	2S	25	36	2,00	12,0	10,90	50
3051677	A4M50R0212B036046	2	36	46	2,00	12,0	10,90	50
3051678	A4M50R0212B042054	2	42	54	2,00	12,0	10,90	50
3051679	A4M50R0212B050064	2	50	64	2,00	12,0	10,90	50
3051680	A4M50R0212B060084	2	60	84	2,00	12,0	10,90	50
3051681	A4M50R0212B080124	2	80	124	2,00	12,0	10,90	50
3051682	A4M50R0212B120254	2	120	254	2,00	12,0	10,90	50
3051683	A4M50R0212B250999	2	250	–	2,00	12,0	10,90	50
3867460	A4M50R3S14B020025	3S	20	25	3,00	14,0	10,49	50
3867461	A4M50R3S14B025036	3S	25	36	3,00	14,0	10,49	50
2398751	A4M50R0314B036048	3	36	48	3,00	14,0	10,50	50
2398752	A4M50R0314B042058	3	42	58	3,00	14,0	10,50	50
2398763	A4M50R0314B052074	3	52	74	3,00	14,0	10,50	50
2398764	A4M50R0314B068100	3	68	100	3,00	14,0	10,50	50
2398765	A4M50R0314B090160	3	90	160	3,00	14,0	10,50	50
2398766	A4M50R0314B130300	3	130	300	3,00	14,0	10,50	50
2398767	A4M50R0314B290999	3	290	–	3,00	14,0	10,50	50
3867462	A4M50R4S14B025035	4S	25	35	4,00	14,0	10,00	50
3867463	A4M50R4S14B035048	4S	35	48	4,00	14,0	10,00	50
2398775	A4M50R0414B048072	4	48	72	4,00	14,0	10,00	50
2398776	A4M50R0414B064100	4	64	100	4,00	14,0	10,00	50
2398777	A4M50R0414B092150	4	92	150	4,00	14,0	10,00	50
2398778	A4M50R0414B132300	4	132	300	4,00	14,0	10,00	50
2398779	A4M50R0414B290999	4	290	–	4,00	14,0	10,00	50
3867464	A4M50R5S17B028038	5S	28	38	5,00	17,0	9,50	50
3867465	A4M50R5S17B038058	5S	38	58	5,00	17,0	9,50	50
2398785	A4M50R0519B058094	5	58	94	5,00	19,0	9,50	50
2398786	A4M50R0519B080136	5	80	136	5,00	19,0	9,50	50
2398787	A4M50R0519B120300	5	120	300	5,00	19,0	9,50	50
2398788	A4M50R0519B250999	5	250	–	5,00	19,0	9,50	50
3557175	A4M65R0624B070-112	6	70	112	6,00	24,0	9,87	65
3557177	A4M65R0624B100-212	6	100	212	6,00	24,0	9,87	65
3557179	A4M65R0624B200-999	6	200	999	6,00	24,0	9,87	65
3557181	A4M65R0824B090-200	8	90	200	8,00	24,0	9,00	65
3557193	A4M65R0824B184-999	8	184	999	8,00	24,0	9,00	65
3557195	A4M65R1024B100-220	10	100	220	10,00	24,0	8,35	65
3557197	A4M65R1024B200-999	10	200	999	10,00	24,0	8,35	65

(continued)

(A4M-B Outboard Sweep continued)

Right hand shown.





order number	catalogue number	seat size	D min	D max	W min	CD	FS	blade size
	left hand							
3867466	**A4M50L2S12B016020**	2S	16	20	2,00	12,0	10,90	50
3867467	**A4M50L2S12B020025**	2S	20	25	2,00	12,0	10,90	50
3867468	**A4M50L2S12B025036**	2S	25	36	2,00	12,0	10,90	50
3051663	**A4M50L0212B036046**	2	36	46	2,00	12,0	10,90	50
3051664	**A4M50L0212B042054**	2	42	54	2,00	12,0	10,90	50
3051665	**A4M50L0212B050064**	2	50	64	2,00	12,0	10,90	50
3051666	**A4M50L0212B060084**	2	60	84	2,00	12,0	10,90	50
3051667	**A4M50L0212B080124**	2	80	124	2,00	12,0	10,90	50
3051668	**A4M50L0212B120254**	2	120	254	2,00	12,0	10,90	50
3867469	**A4M50L3S14B020025**	3S	20	25	3,00	14,0	10,49	50
3867470	**A4M50L3S14B025036**	3S	25	36	3,00	14,0	10,49	50
2398768	**A4M50L0314B036048**	3	36	48	3,00	14,0	10,50	50
2398769	**A4M50L0314B042058**	3	42	58	3,00	14,0	10,50	50
2398770	**A4M50L0314B052074**	3	52	74	3,00	14,0	10,50	50
2398771	**A4M50L0314B068100**	3	68	100	3,00	14,0	10,50	50
2398772	**A4M50L0314B090160**	3	90	160	3,00	14,0	10,50	50
2398773	**A4M50L0314B130300**	3	130	300	3,00	14,0	10,50	50
2398774	**A4M50L0314B290999**	3	290	—	3,00	14,0	10,50	50
3867471	**A4M50L4S14B025035**	4S	25	35	4,00	14,0	10,00	50
3867472	**A4M50L4S14B035048**	4S	35	48	4,00	14,0	10,00	50
2398780	**A4M50L0414B048072**	4	48	72	4,00	14,0	10,00	50
2398781	**A4M50L0414B064100**	4	64	100	4,00	14,0	10,00	50
2398782	**A4M50L0414B092150**	4	92	150	4,00	14,0	10,00	50
2398783	**A4M50L0414B132300**	4	132	300	4,00	14,0	10,00	50
2398784	**A4M50L0414B290999**	4	290	—	4,00	14,0	10,00	50
3867484	**A4M50L5S17B028038**	5S	28	38	5,00	17,0	9,50	50
3867485	**A4M50L5S17B038058**	5S	38	58	5,00	17,0	9,50	50
2398789	**A4M50L0519B058094**	5	58	94	5,00	19,0	9,50	50
2398790	**A4M50L0519B080136**	5	80	136	5,00	19,0	9,50	50
2398791	**A4M50L0519B120300**	5	120	300	5,00	19,0	9,50	50
2398792	**A4M50L0519B250999**	5	250	—	5,00	19,0	9,50	50
3557176	**A4M65L0624B070-112**	6	70	112	6,00	24,0	9,87	65
3557178	**A4M65L0624B100-212**	6	100	212	6,00	24,0	9,87	65
3557180	**A4M65L0624B200-999**	6	200	999	6,00	24,0	9,87	65
3557182	**A4M65L0824B090-200**	8	90	200	8,00	24,0	9,00	65
3557194	**A4M65L0824B184-999**	8	184	999	8,00	24,0	9,00	65
3557196	**A4M65L1024B100-220**	10	100	220	10,00	24,0	8,35	65
3557198	**A4M65L1024B200-999**	10	200	999	10,00	24,0	8,35	65

A4™ Tooling and Beyond™ Inserts

The unique clamping system and versatile insert geometry deliver the highest metal removal rates in the industry.

- 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.

beyond™

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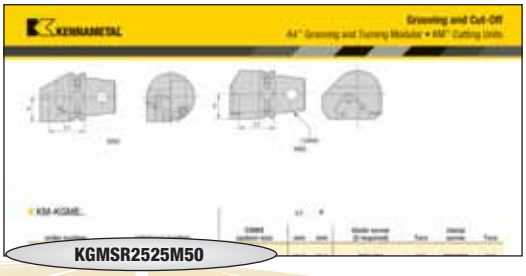
KENNAMETAL®

How Do Catalogue Numbers Work?

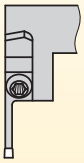
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.

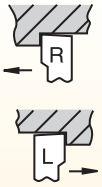


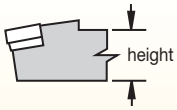
KGM	S	R	25	25	M	50
Grooving Modular	Tool Style	Hand of Tool	Shank Dimensions	Blade Size	Tool Length	Blade Size

S

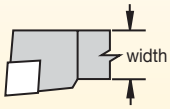
E







shank height in millimetres



shank width in millimetres

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

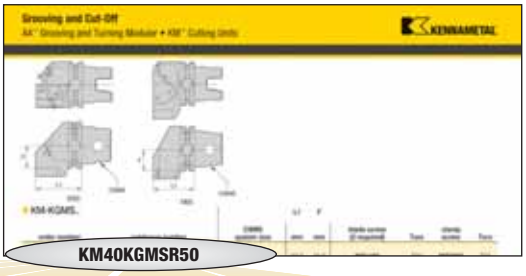
rectangular shanks:
The first digit indicates the number of 1/8" increments of width and the second digit indicates the number of 1/4" increments of height.

M = 150mm
N = Inch
P = 170mm

length over insert in a support blade with a 12,5mm D dimension according to ISO

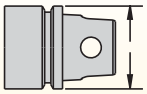
How Do Catalogue Numbers Work?

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

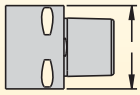


KM40	KGM	S	R	50	
System and Size	Grooving Modular	Tool Style	Hand of Tool	Blade Size	Special Conditions
	G = Square **R** = Full radius **V** = V-style 35°	**S** **E**	R L		**Y** = Mazak® INTEGREX® Y-series machines

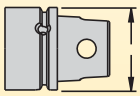
KM™ size
KM40™ = 40mm dia.
KM50™ = 50mm dia.
KM63™ = 63mm dia.



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

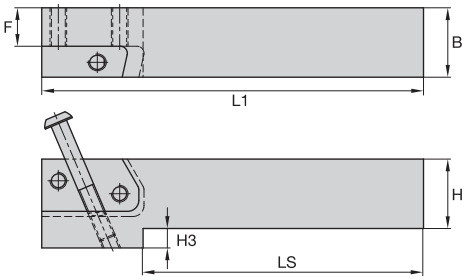


KMXMZ size
KM63XMZ™ = 63mm dia.

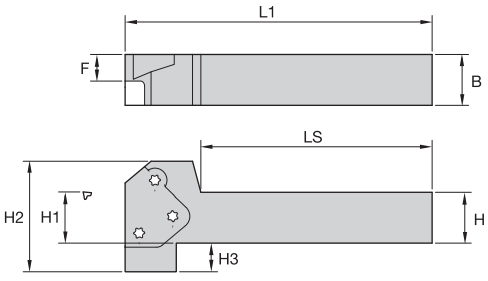


(KM-KGMSR...)

(KM-KGMEL...)



M50
2 blade screws required

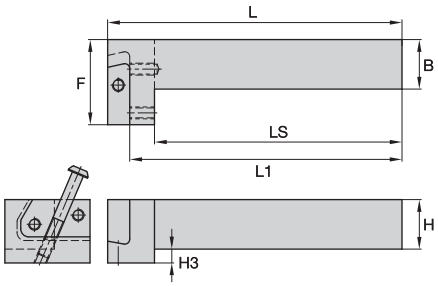


M65
3 blade screws required

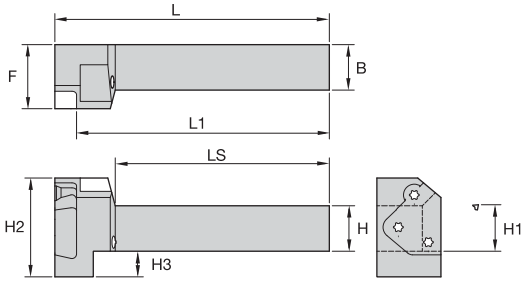
KGMS..

order number	catalogue number	B	H	L1	F	LS	H3	blade screw	Torx	clamp screw	Torx
	right hand										
1600249	**KGMSR2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553429	**KGMSR2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621083	**KGMSR3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553431	**KGMSR3232P65**	32	32	170,00	20,79	158,00	7,00	**MS1163**	T30	**–**	–
	left hand										
1600250	**KGMSL2525M50**	25	25	138,75	13,84	109,00	7,00	**MS1162**	T25	**MS2002**	T25
3553430	**KGMSL2525M65**	25	25	150,00	13,00	125,00	14,00	**MS1163**	T30	**–**	–
1621084	**KGMSL3232P50**	32	32	158,75	20,81	–	–	**MS1162**	T25	**MS2002**	T25
3553432	**KGMSL3232P65**	32	32	170,00	20,79	158,00	7,00	**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 D108–D109.



M50
2 blade screws required

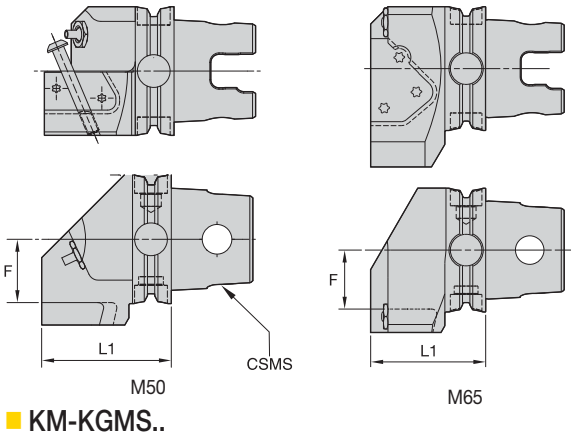


M65
3 blade screws required

KGME..

order number	catalogue number	B	H	L1	F	LS	H3	L	blade screw	Torx	clamp screw	Torx
	right hand											
1600270	**KGMER2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553453	**KGMER2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621085	**KGMER3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553455	**KGMER3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–
	left hand											
1600271	**KGMEL2525M50**	25	25	139,25	42,75	125,25	6,84	150,25	**MS1162**	T25	**MS2002**	T25
3553454	**KGMEL2525M65**	25	25	138,15	35,00	129,00	14,00	150,00	**MS1163**	T30	**–**	–
1621086	**KGMEL3232P50**	32	32	159,25	42,75	145,25	–	170,25	**MS1162**	T25	**MS2002**	T25
3553456	**KGMEL3232P65**	32	32	158,15	35,00	153,00	7,00	170,00	**MS1163**	T30	**–**	–

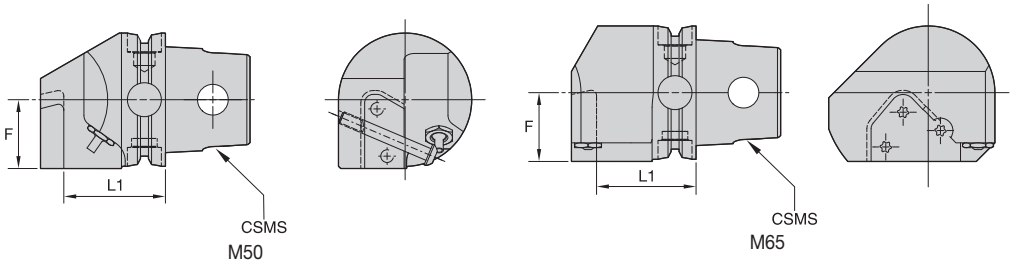
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-KGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
3950268	**KM40TSKGMSR50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
1982206	**KM40XTSKGMSR50**	KM40XTS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747129	**KM50TSKGMSR50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747134	**KM50TSKGMSR65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255824	**KM63TSKGMSR50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590203	**KM63TSKGMSR65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670383	**KM80TSKGMSR50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670384	**KM80TSKGMSR65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–
	left hand							
3950267	**KM40TSKGMSL50**	KM40TS	53,5	15,0	**MS1162**	T25	**MS2002**	T25
3747130	**KM50TSKGMSL50**	KM50TS	58,5	23,0	**MS1162**	T25	**MS2002**	T25
3747135	**KM50TSKGMSL65**	KM50TS	53,5	22,0	**MS1163**	T30	**–**	–
2255543	**KM63TSKGMSL50**	KM63TS	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3590204	**KM63TSKGMSL65**	KM63TS	58,5	30,0	**MS1163**	T30	**–**	–
3670371	**KM80TSKGMSL50**	KM80TS	66,5	41,0	**MS1162**	T25	**MS2002**	T25
3670372	**KM80TSKGMSL65**	KM80TS	63,5	40,0	**MS1163**	T30	**–**	–

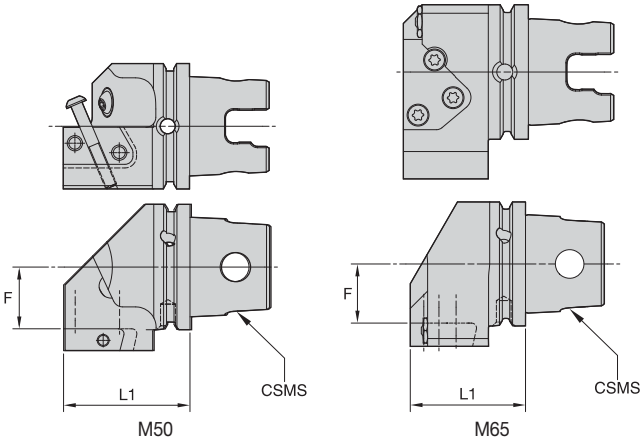
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-KGME..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
3950266	**KM40TSKGMER50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747133	**KM50TSKGMER50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747136	**KM50TSKGMER65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265404	**KM63TSKGMER50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590205	**KM63TSKGMER65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670369	**KM80TSKGMER50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670370	**KM80TSKGMER65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–
	left hand							
3950265	**KM40TSKGMEL50**	KM40TS	28,0	20,5	**MS1162**	T25	**MS2002**	T25
3747132	**KM50TSKGMEL50**	KM50TS	38,0	25,5	**MS1162**	T25	**MS2002**	T25
3747137	**KM50TSKGMEL65**	KM50TS	47,0	25,5	**MS1163**	T30	**–**	–
2265405	**KM63TSKGMEL50**	KM63TS	48,0	32,5	**MS1162**	T25	**MS2002**	T25
3590206	**KM63TSKGMEL65**	KM63TS	47,0	32,5	**MS1163**	T30	**–**	–
3670367	**KM80TSKGMEL50**	KM80TS	58,0	40,5	**MS1162**	T25	**MS2002**	T25
3670368	**KM80TSKGMEL65**	KM80TS	57,0	40,5	**MS1163**	T30	**–**	–

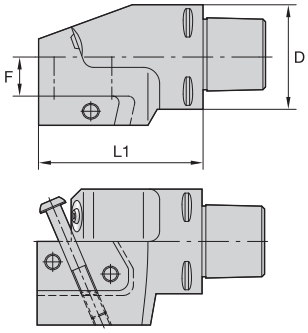
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



KM-XMZKGMS..

order number	catalogue number	CSMS system size	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756550	**KM63XMZKGMSR50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588679	**KM63XMZKGMSR65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–
	left hand							
1756574	**KM63XMZKGMSLF50Y**	KM63XMZ	63,5	31,0	**MS1162**	T25	**MS2002**	T25
3588680	**KM63XMZKGMSLF65Y**	KM63XMZ	58,5	30,0	**MS1163**	T30	**–**	–

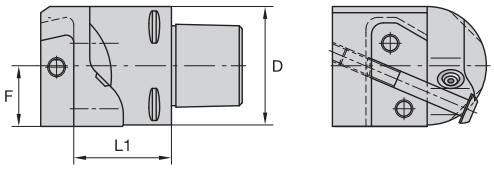
NOTE: KGMS..: Right-hand holder uses right-hand blades.
KGME..: Right-hand holder uses left-hand blades.
M50 blade and clamp screw torque equals 8–10 Nm (71–88 in. lbs.).
M65 blade and clamp screw torque equals 18–20 Nm (159–177 in. lbs.).
See Modular Blade Assembly Diagrams on pages D108–D109.



C-KGMS

order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756576	**C4KGMSR50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756584	**C5KGMSR50**	50	63,5	15	**MS1162**	T25	**MS2002**	T25
	left hand							
1756578	**C4KGMSL50**	40	63,5	10	**MS1162**	T25	**MS2002**	T25
1756585	**C5KGMSL50**	50	63,5	15	**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 D108–D109.



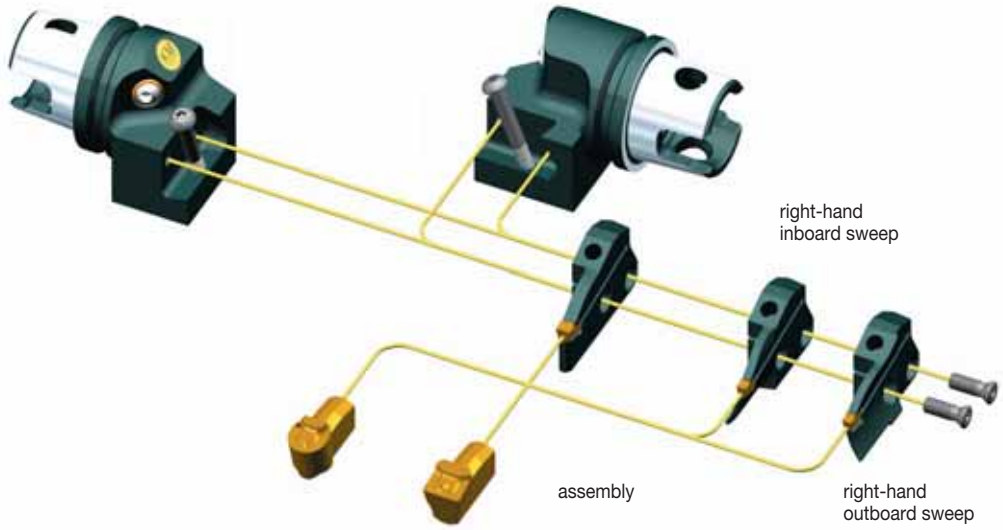
C-KGME

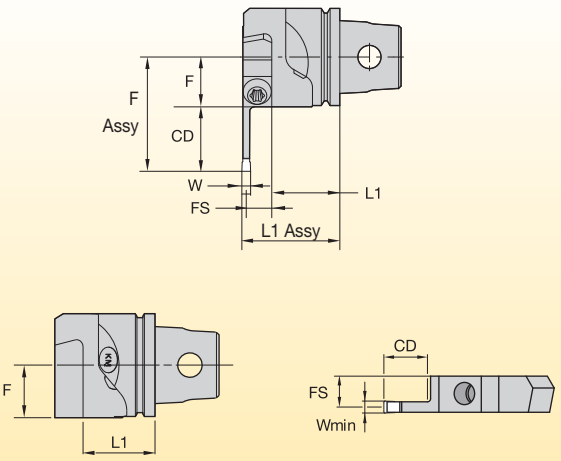
order number	catalogue number	D mm	L1 mm	F mm	blade screw (2 required)	Torx	clamp screw	Torx
	right hand							
1756579	**C4KGMER50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756587	**C5KGMER50**	50	43,0	26	**MS1162**	T25	**MS2002**	T25
	left hand							
1756583	**C4KGMEL50**	40	33,0	21	**MS1162**	T25	**MS2002**	T25
1756589	**C5KGMEL50**	50	43,0	26	**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 D108–D109.

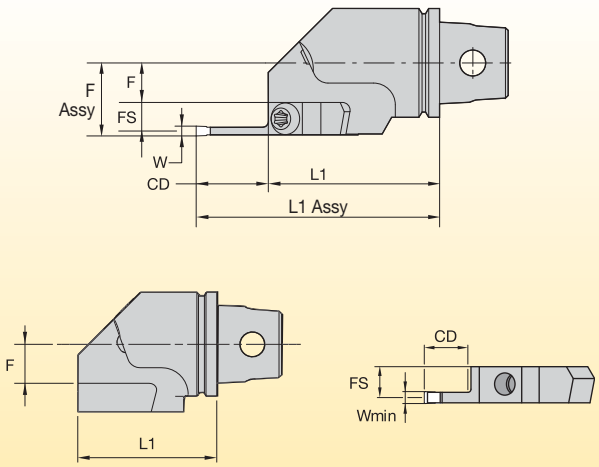
A3™ and A4™ Modular Blade Assemblies

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





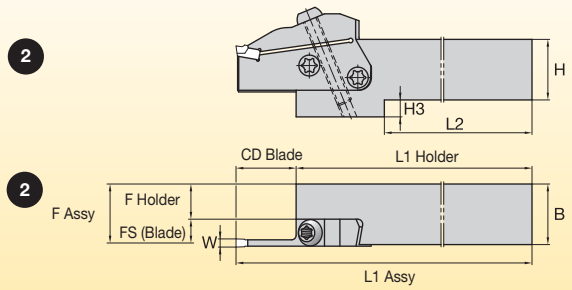
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)



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

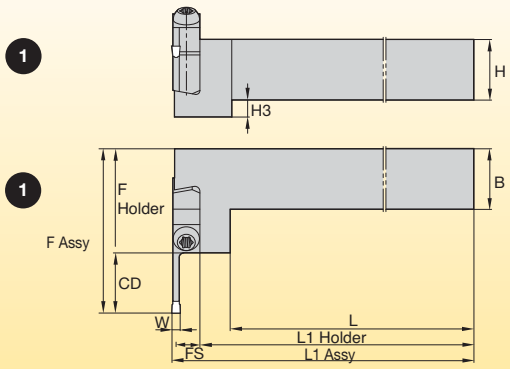
A3™ Modular Blades Assemblies

KGMS Toolholder with Modular Blade Assemblies



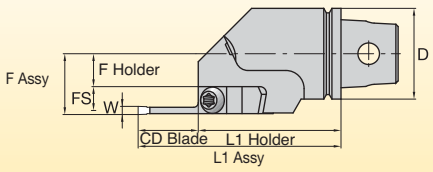
2 F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KGME Toolholder with Modular Blade Assemblies



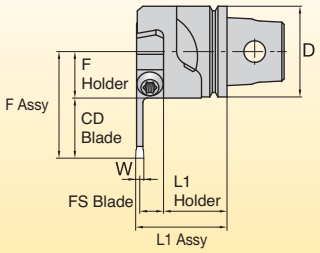
1 F Assy = F (Holder) + CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

KM-KGMS



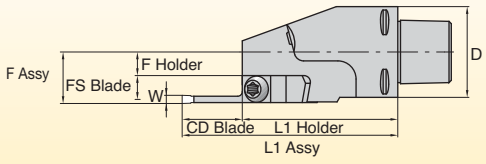
F Assy = F (Holder) + FS (Blade) + W/2
L1 Assy = L1 (Holder) + CD (Blade)

KM-KGME



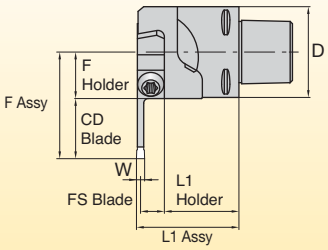
F Assy = F (Holder) +CD (Blade)
L1 Assy = L1 (Holder) + FS (Blade) + W/2

C-KGMS



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

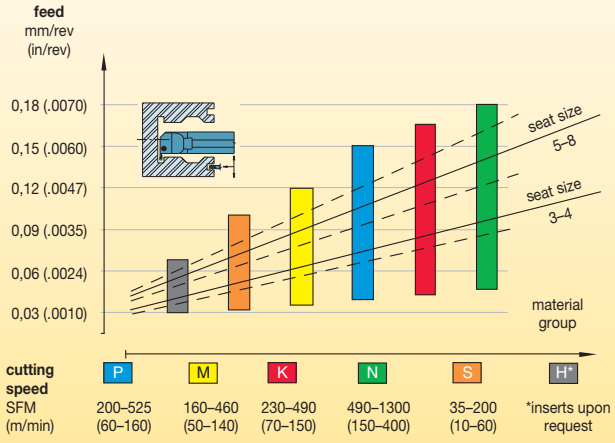
C-KGME



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

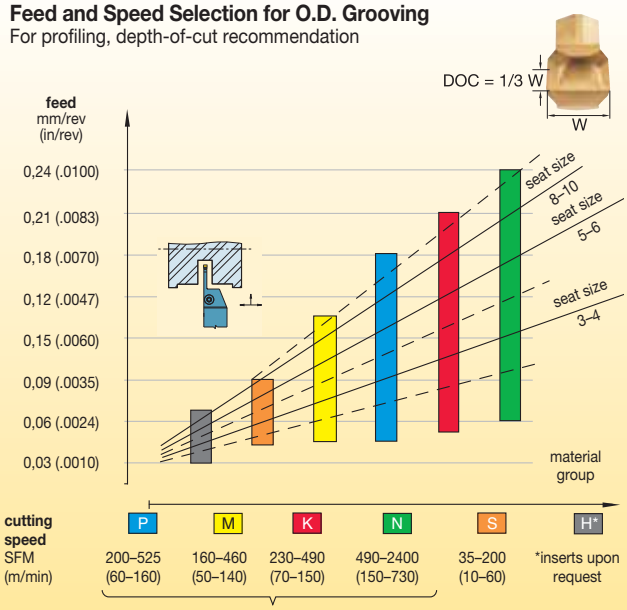
Application Guidelines

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



Feed and Speed Selection for O.D. Grooving

For profiling, depth-of-cut recommendation

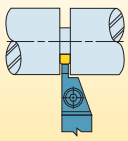


For radial grooving under stable conditions, feed can be increased by up to 50%.

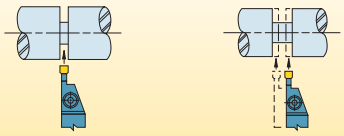
Tool Application Guidelines

- 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

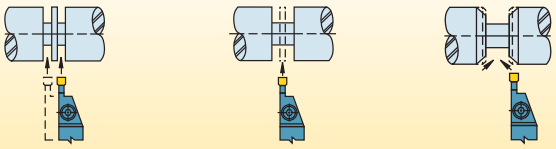


Deep Grooves Slightly Wider than the Tool



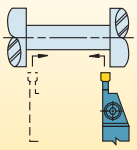
1. Plunge the center of the groove.
2. Plunge each side of the groove to get the specified width. Use a slower feed rate when cutting groove sides.

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.

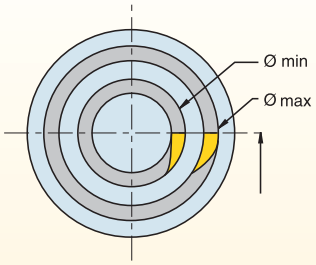
Finish Turning of the Groove/Light Profiling



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

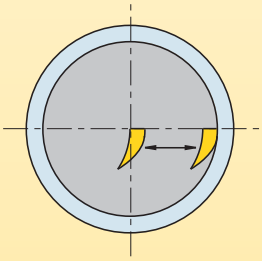
- The outside diameter of the first groove must be between the diameter minimum and diameter maximum capability of the face grooving tool (see illustration above). This creates clearance for the toolholder.

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).

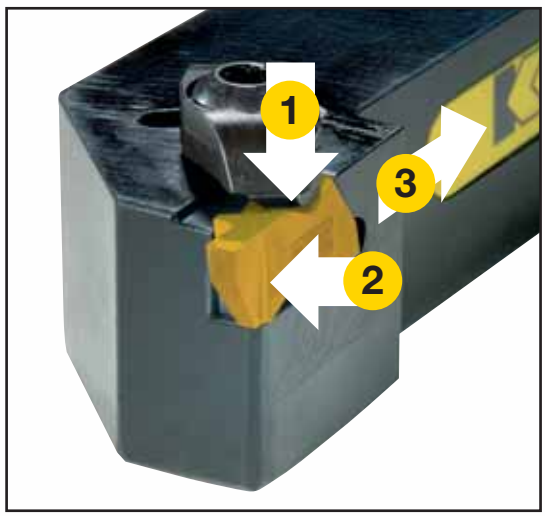
Top Notch™ Grooving Tools and Beyond™ Inserts for Your Shallow Groove and Turn Operations

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 pages D28–D33 or A4 Grooving and Turning pages D64–D78.

Top Notch Grooving for Internal, External, and Face Grooving Applications

system capabilities		minimum (mm)	maximum (mm)
O.D./I.D. grooving	width	0,79	9,53
	depth	1,27	9,53
face grooving	width	3,18	9,53
	depth	3,81	6,35
internal grooving	diameter	11,2	—
face grooving diameter	standard	23,9	—
	deep	47,6	—
deep O.D./I.D. grooving	width	1,57	6,35
	depth	3,18	12,70
deep face grooving	width	3,18	6,35
	depth	6,35	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 D134–D136
I.D. grooving applications .....see pages D137–D139

Step 3 • Select chipbreaker style and feed rate

Chipbreaker and Feed Rates • mm/rev

workpiece material and application	P	M	K	N	S	H
first choice	NG-K 0,08–0,28	NG-K 0,07–0,20	NG 0,01–0,30	NGP 0,01–0,30	NG-K 0,07–0,20	NG-ST CBN tipped 0,05–0,10
alternate choice	NG 0,10–0,30	NGP 0,10–0,23	NG-K 0,08–0,28	NG-K 0,08–0,30	NGP 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 • 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 120–370	KCU10/KC5010 80–230	KC9320 120–370	KD1425 240–3050	KCU10/KC5010 20–120	KB5625 80–150
	KT315 100–230	KT315 70–200	KC5010 80–230	—	—	—
general purpose (first choice for general machining)	KC9110 120–300	KCU25/KC5025 50–120	KC9110 120–300	KC5410 150–910	KCU25/KC5025 10–60	KB5625 80–150
unfavorable conditions (roughing, poor machine condition, interrupted cuts, low speed, I.D. grooving)	KCU25/KC5025 50–140	KCU25/KC5025 40–90	KC5025 60–300	KCU25/KC5025 60–300	KCU25/KC5025 10–50	KB1630 60–110

Step 5 • Select insert and holder from catalogue page

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

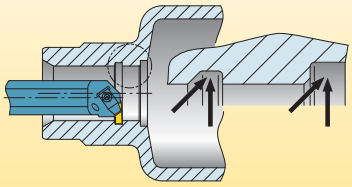
Example for Top Notch • Grooving

Material.....low-alloyed steel
Groove depth 2mm
Groove width 3mm
Operation .....I.D. cut, limited speed capability, plunge groove and chamfer

Recommendation

Insert.....NG2M300RK
Grade KC5025
Insert width 3mm
Insert size 2

Toolholder.....A20QNNTOL2 (metric)
Gage insert N.2R



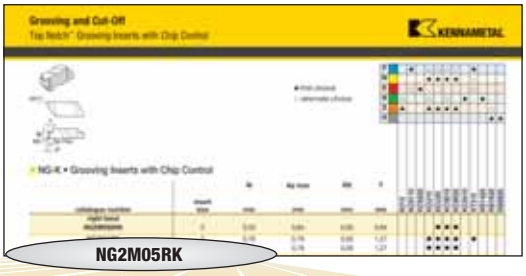
Speed: 120 m/min
Feed: 0,15 mm/rev

Congratulations!

You have successfully maximised your productivity by selecting the best Top Notch insert geometry, grade, and cutting specifications for your application!

How Do Catalogue Numbers Work?

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



N	G		2	M	05	R		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		**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

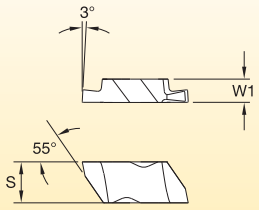
insert number	W1 (mm)
1	2,54
2	3,81
3	4,95
4	6,48
5	9,65
6	9,73

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 0,01mm.
Example: 3,25mm width groove or radius equals "325" catalogue position number.
Width tolerance: ± 0,025mm unless otherwise specified

*Kennametal proprietary identification system.

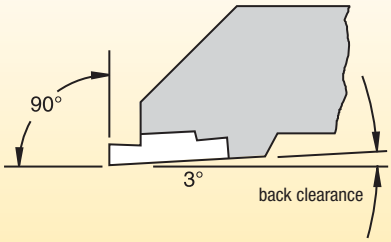
**Omit position for Top Notch NB-style blanks.

Top Notch Threading and Grooving Insert Dimensions



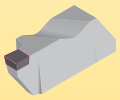
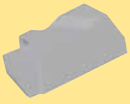
insert size	S		W1	
	mm	inch	mm	inch
1	2,54	.100	2,54	.100
2	5,56	.219	3,81	.150
3	8,74	.344	4,95	.195
4	11,51	.453	6,48	.255
5	17,48	.688	9,65	.380
6	11,51	.453	9,73	.383
8	7,93	.312	11,13	.438

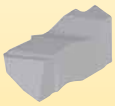
Top Notch Holder Design

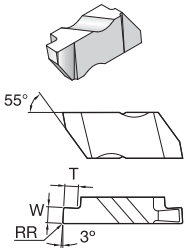


NOTE: Holders are designed to locate insert inclined to 3° to provide back clearance down open side.

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	D118
NG-K 	• Chip control geometry. • General-purpose grooving. • O-ring grooving. • Circlip grooving. • Light turning.	10° positive	D120
NG-ST 	• Hard turning.	neutral	D125
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	D131
NGD 	• Deep grooving.	neutral	D123
NGD-K 	• Chip control geometry. • Deep grooving. • Light turning.	10° positive	D124
NGP 	• General-purpose grooving. • O-ring grooving. • Circlip grooving.	5° positive	D123
NF 	• Face grooving. • Additional side clearance.	neutral	D129
NF-K 	• Face grooving with chip control. • Additional side clearance.	10° positive	D129
NFD-K 	• Deep face grooving with chip control. • Additional side clearance.	10° positive	D129

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	D130
NP-K NPD-K 	• Turning. • Back turning positive. • Profiling with chip control.	10° positive	D130
NR 	• Full radius grooving. • Turning profiling.	neutral	D126
NR-K 	• Chip control geometry. • Full radius grooving turning profiling.	10° positive	D127
NRD 	• Deep grooving. • Full radius endform.	neutral	D128
NRP 	• Full radius grooving. • Light-turning profiling.	5° positive	D127
NU 	• Undercutting.	neutral	D128
NV 	• Poly Vee grooving.	neutral	D128
NB/NBD 	• Blanks. • Blanks for deep grooving. • Available only in uncoated grades.	—	D131



● first choice
○ alternate choice

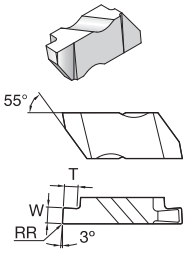
P		●		○	○	○	○		●					
M				●	●	●	●		○					
K		○	●						○					
N	○			○		○		●		●				
S	●			●	●	●	●					○		
H												●	●	

NG • Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG2031R	2	0,79	–	0,09	1,27	●			●	●	●	●					
NG2041R	2	1,04	–	0,09	1,27	●			●	●	●	●					
NG2047R	2	1,19	–	0,09	1,27				●	●	●	●					
NG2058R	2	1,47	–	0,19	1,27					●		●					
NG2062R	2	1,58	–	0,19	2,79	●			●	●	●	●					
NG2094R	2	2,39	–	0,19	2,79	●			●	●	●	●					
NG2125R	2	3,18	–	0,19	2,79				●	●	●	●					
NG3047R	3	1,19	–	0,19	1,91	●	●		●	●	●	●					
NG3062R	3	1,58	–	0,19	2,39	●	●		●	●	●	●			●	●	
NG3072R	3	1,83	–	0,19	2,39				●		●						
NG3078R	3	1,98	–	0,19	2,39				●		●						
NG3088R	3	2,24	–	0,19	2,39				●	●	●	●					
NG3094R	3	2,39	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3097R	3	2,46	–	0,32	3,81				●	●	●	●					
NG3105R	3	2,67	–	0,19	3,81				●	●	●	●					
NG3110R	3	2,79	–	0,32	3,81					●		●					
NG3122R	3	3,10	–	0,19	3,81					●		●					
NG3125R	3	3,18	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3142R	3	3,61	–	0,32	3,81					●	●	●					
NG3156R	3	3,96	–	0,19	3,81				●	●	●	●					
NG3178R	3	4,52	–	0,19	3,81							●					
NG3185R	3	4,70	–	0,57	3,81					●		●					
NG3189R	3	4,80	–	0,57	3,81	●			●	●	●	●			●		
NG4125R	4	3,18	–	0,19	3,81	●			●	●	●	●					
NG4189R	4	4,80	–	0,57	6,35	●	●		●	●	●	●				●	
NG4213R	4	5,41	–	0,19	6,35					●		●					
NG4219R	4	5,56	–	0,57	6,35							●					
NG4250R	4	6,35	–	0,57	6,35	●	●		●	●	●	●					
NG5250R	5	6,35	–	0,57	9,52							●					
NG5312R	5	7,93	–	0,83	9,52					●		●					
NG5375R	5	9,53	–	0,83	9,52							●					
NG6281R	6	7,14	–	0,83	6,35					●		●					
NG6375R	6	9,53	–	0,83	6,35					●		●					

(continued)

(NG • Grooving Inserts continued)

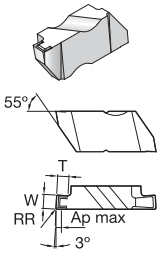


● first choice
○ alternate choice

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

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
left hand																	
NG2031L	2	0,79	–	0,09	1,27	●			●	●	●	●					
NG2041L	2	1,04	–	0,09	1,27					●	●	●					
NG2047L	2	1,19	–	0,09	1,27				●	●	●	●					
NG2058L	2	1,47	–	0,19	1,27					●	●	●					
NG2062L	2	1,58	–	0,19	2,79	●			●	●	●	●					
NG2094L	2	2,39	–	0,19	2,79	●			●	●	●	●					
NG2125L	2	3,18	–	0,19	2,79				●	●	●	●					
NG3047L	3	1,19	–	0,19	1,91	●			●	●	●	●					
NG3062L	3	1,58	–	0,19	2,39	●			●	●	●	●			●	●	
NG3072L	3	1,83	–	0,19	2,39				●		●						
NG3078L	3	1,98	–	0,19	2,39				●		●						
NG3088L	3	2,24	–	0,19	2,39				●	●	●	●					
NG3094L	3	2,39	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3097L	3	2,46	–	0,32	3,81				●	●	●	●					
NG3105L	3	2,67	–	0,19	3,81				●	●	●	●					
NG3110L	3	2,79	–	0,32	3,81					●		●					
NG3122L	3	3,10	–	0,19	3,81					●		●					
NG3125L	3	3,18	–	0,19	3,81	●	●		●	●	●	●			●	●	
NG3142L	3	3,61	–	0,32	3,81				●	●	●	●					
NG3156L	3	3,96	–	0,19	3,81					●	●	●					
NG3178L	3	4,52	–	0,19	3,81					●		●					
NG3185L	3	4,70	–	0,57	3,81							●					
NG3189L	3	4,80	–	0,57	3,81	●	●		●	●	●	●			●		
NG4125L	4	3,18	–	0,19	3,81	●			●	●	●	●					
NG4189L	4	4,80	–	0,57	6,35	●			●	●	●	●				●	
NG4250L	4	6,35	–	0,57	6,35	●			●	●	●	●					
NG5312L	5	7,93	–	0,83	9,52							●					
NG6375L	6	9,53	–	0,83	6,35							●					

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



● first choice
○ alternate choice

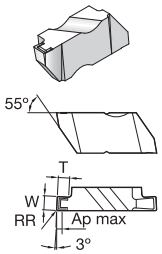
P			●		○	○	○	○		●				
M					●	●	●	●		○				
K			○	●						○				
N		○			○		○		●		●			
S		●			●	●	●	●				○		
H												●	●	

NG-K • Grooving Inserts with Chip Control

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG2M050RK	2	0,50	0,64	0,09	0,64					●	●	●					
NG2031RK	2	0,79	0,76	0,09	1,27				●	●	●	●		●			
NG2M080RK	2	0,80	0,76	0,09	1,27				●	●	●	●					
NG2M100RK	2	1,00	0,76	0,09	1,27				●	●	●	●					
NG2047RK	2	1,19	0,76	0,09	1,27				●	●	●	●		●			
NG2M120RK	2	1,20	0,76	0,09	1,27				●	●	●	●					
NG2M140RK	2	1,40	0,76	0,09	1,27				●	●	●	●					
NG2M150RK	2	1,50	1,09	0,19	2,79					●		●					
NG2062RK	2	1,58	1,09	0,19	2,79				●	●	●	●		●			
NG2M170RK	2	1,70	1,09	0,19	2,79				●	●	●	●					
NG2M175RK	2	1,75	1,09	0,19	2,79					●		●					
NG2M195RK	2	1,95	1,09	0,19	2,79				●	●	●	●					
NG2M200RK	2	2,00	1,09	0,19	2,79				●	●	●	●		●			
NG2M220RK	2	2,20	1,09	0,19	2,79					●		●					
NG2M225RK	2	2,25	1,09	0,19	2,79				●	●	●	●					
NG2094RK	2	2,39	1,09	0,19	2,79				●	●	●	●		●			
NG2M250RK	2	2,50	1,09	0,19	2,79					●		●					
NG2M275RK	2	2,75	1,09	0,19	2,79				●	●	●	●					
NG2M300RK	2	3,00	1,09	0,19	2,79				●	●	●	●					
NG2125RK	2	3,18	1,09	0,19	2,79				●	●	●	●		●			
NG2M325RK	2	3,25	1,09	0,19	2,79					●		●					
NG3M100RK	3	1,00	0,76	0,19	1,91					●		●					
NG3047RK	3	1,19	0,76	0,19	1,91		●		●	●	●	●					
NG3M120RK	3	1,20	0,76	0,19	1,91				●	●	●	●					
NG3M150RK	3	1,50	1,02	0,19	2,39			●		●		●		●			
NG3062RK	3	1,58	1,02	0,19	2,39		●	●	●	●	●	●		●			
NG3M175RK	3	1,75	1,02	0,19	2,39					●		●					
NG3072RK	3	1,83	1,02	0,19	2,39				●	●	●	●					
NG3078RK	3	1,98	1,02	0,19	2,39		●		●	●	●	●					
NG3M200RK	3	2,00	1,02	0,19	2,39		●	●		●		●		●			
NG3M220RK	3	2,20	1,02	0,19	2,39					●		●					
NG3M225RK	3	2,24	1,02	0,19	2,39		●	●	●	●	●	●					
NG3094RK	3	2,39	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M250RK	3	2,50	1,02	0,19	3,81		●	●		●		●		●			
NG3M275RK	3	2,75	1,02	0,19	3,81				●	●	●	●					
NG3M300RK	3	3,00	1,02	0,19	3,81		●	●	●	●	●	●		●			
NG3125RK	3	3,18	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M320RK	3	3,20	1,02	0,19	3,81					●		●					
NG3M325RK	3	3,25	1,02	0,19	3,81					●		●					

(continued)

(NG-K • Grooving Inserts with Chip Control continued)



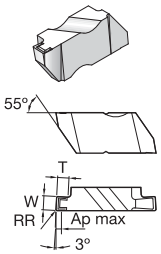
● first choice
○ alternate choice

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

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG3M350RK	3	3,50	2,92	0,32	3,81					●		●		●			
NG3156RK	3	3,96	2,92	0,19	3,81				●	●	●	●					
NG3M400RK	3	3,99	2,92	0,32	3,81		●	●	●	●	●	●		●			
NG3M425RK	3	4,24	2,92	0,32	3,81				●	●	●	●					
NG3M450RK	3	4,50	2,92	0,32	3,81					●		●					
NG3189RK	3	4,80	2,92	0,57	3,81		●	●	●	●	●	●		●			
NG4M300RK	4	3,00	1,02	0,19	3,81					●		●					
NG4125RK	4	3,18	1,02	0,19	3,81				●	●	●	●					
NG4M350RK	4	3,50	2,92	0,57	6,35		●	●		●		●					
NG4M400RK	4	4,00	2,92	0,57	6,35			●	●	●	●	●					
NG4M450RK	4	4,50	2,92	0,57	6,35					●		●					
NG4189RK	4	4,80	2,92	0,57	6,35		●		●	●	●	●					
NG4M500RK	4	5,00	2,92	0,32	6,35		●	●	●	●	●	●					
NG4M550RK	4	5,50	3,81	0,57	6,35					●		●					
NG4M600RK	4	6,00	3,81	0,57	6,35		●	●		●		●					
NG4250RK	4	6,35	3,81	0,57	6,35				●	●	●	●					
left hand																	
NG2M050LK	2	0,50	0,64	0,09	0,64						●	●					
NG2031LK	2	0,79	0,76	0,09	1,27				●	●	●	●		●			
NG2M080LK	2	0,80	0,76	0,09	1,27				●	●	●	●					
NG2M100LK	2	1,00	0,76	0,09	1,27				●	●	●	●					
NG2047LK	2	1,19	0,76	0,09	1,27				●	●	●	●					
NG2M120LK	2	1,20	0,76	0,09	1,27				●	●	●	●					
NG2M140LK	2	1,40	0,76	0,09	1,27				●	●	●	●					
NG2M150LK	2	1,50	1,09	0,19	2,79					●		●					
NG2062LK	2	1,58	1,09	0,19	2,79				●	●	●	●					
NG2M170LK	2	1,70	1,09	0,19	2,79				●	●	●	●					
NG2M175LK	2	1,75	1,09	0,19	2,79					●		●					
NG2M195LK	2	1,95	1,09	0,19	2,79				●	●	●	●					
NG2M200LK	2	2,00	1,09	0,19	2,79				●	●	●	●					
NG2M220LK	2	2,20	1,09	0,19	2,79					●		●					
NG2M225LK	2	2,25	1,09	0,19	2,79				●	●	●	●					
NG2094LK	2	2,39	1,09	0,19	2,79				●	●	●	●					
NG2M250LK	2	2,50	1,09	0,19	2,79					●		●					
NG2M275LK	2	2,75	1,09	0,19	2,79					●	●	●					
NG2M300LK	2	3,00	1,09	0,19	2,79				●	●	●	●					
NG2125LK	2	3,18	1,09	0,19	2,79				●	●	●	●					
NG2M325LK	2	3,25	1,09	0,19	2,79					●		●					
NG3M100LK	3	1,00	0,76	0,19	1,91					●		●					
NG3047LK	3	1,19	0,76	0,19	1,91				●	●	●	●					
NG3M120LK	3	1,20	0,76	0,19	1,91				●	●	●	●					
NG3M150LK	3	1,50	1,02	0,19	2,39		●	●		●		●					
NG3062LK	3	1,58	1,02	0,19	2,39			●	●	●	●	●		●			
NG3M175LK	3	1,75	1,02	0,19	2,39					●		●					
NG3072LK	3	1,83	1,02	0,19	2,39				●	●	●	●					
NG3078LK	3	1,98	1,02	0,19	2,39				●	●	●	●					

(continued)

(NG-K • Grooving Inserts with Chip Control continued)

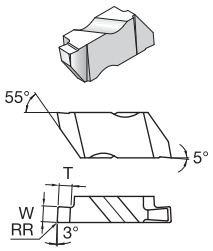


● first choice
○ alternate choice

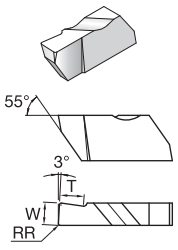
P		●		○	○	○	○		●					
M				●	●	●	●		○					
K		○	●						○					
N	○			○		○		●		●				
S	●			●	●	●	●				○			
H												●	●	

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
NG3M200LK	3	2,00	1,02	0,19	2,39			●		●		●					
NG3M220LK	3	2,20	1,02	0,19	2,39					●		●					
NG3M225LK	3	2,24	1,02	0,19	2,39		●	●	●	●	●	●					
NG3094LK	3	2,39	1,02	0,19	3,81		●		●	●	●	●		●			
NG3M250LK	3	2,50	1,02	0,19	3,81		●	●		●		●					
NG3M275LK	3	2,75	1,02	0,19	3,81				●	●	●	●					
NG3M300LK	3	3,00	1,02	0,19	3,81		●	●	●	●	●	●					
NG3125LK	3	3,18	1,02	0,19	3,81		●		●	●	●	●					
NG3M320LK	3	3,20	1,02	0,19	3,81					●		●					
NG3M325LK	3	3,25	1,02	0,19	3,81					●		●					
NG3M350LK	3	3,50	2,92	0,32	3,81					●		●					
NG3156LK	3	3,96	2,92	0,19	3,81				●	●	●	●					
NG3M400LK	3	3,99	2,92	0,32	3,81		●	●	●	●	●	●					
NG3M425LK	3	4,25	2,92	0,32	3,81				●	●	●	●					
NG3M450LK	3	4,50	2,92	0,32	3,81					●		●					
NG3189LK	3	4,80	2,92	0,57	3,81		●	●	●	●	●	●					
NG4M300LK	4	3,00	1,02	0,19	3,81					●		●					
NG4125LK	4	3,18	1,02	0,19	3,81				●	●	●	●					
NG4M350LK	4	3,50	2,92	0,57	6,35		●	●		●		●					
NG4M400LK	4	4,00	2,92	0,57	6,35		●	●	●	●	●	●					
NG4M450LK	4	4,50	2,92	0,57	6,35							●					
NG4189LK	4	4,80	2,92	0,57	6,35		●		●	●	●	●					
NG4M500LK	4	5,00	2,92	0,32	6,35		●	●	●	●	●	●					
NG4M550LK	4	5,50	3,81	0,57	6,35					●		●					
NG4M600LK	4	6,00	3,81	0,57	6,35			●		●		●					
NG4250LK	4	6,35	3,81	0,57	6,35				●	●	●	●					

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



NGP



NGD

● first choice
○ alternate choice

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

NGP • Grooving Positive Rake Inserts

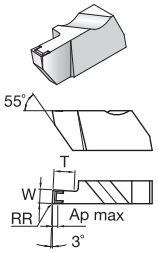
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGP2031R	2	0,79	–	0,09	1,27				●		●		●				
NGP2M150R	2	1,50	–	0,19	2,79	●											
NGP2062R	2	1,58	–	0,19	2,79				●		●		●				
NGP2125R	2	3,18	–	0,19	2,79				●		●		●				
NGP3088R	3	2,24	–	0,19	2,39				●		●		●		●		
NGP3125R	3	3,18	–	0,19	3,81				●		●		●		●		
NGP3156R	3	3,96	–	0,19	3,81				●		●						
NGP3189R	3	4,80	–	0,57	3,81						●						
NGP4189R	4	4,80	–	0,57	6,35				●		●		●				
NGP4250R	4	6,35	–	0,57	6,35				●		●						
left hand																	
NGP2031L	2	0,79	–	0,09	1,27				●		●		●				
NGP2M150L	2	1,50	–	0,19	2,79	●											
NGP2062L	2	1,58	–	0,19	2,79				●		●		●				
NGP2M200L	2	2,00	–	0,19	2,79	●											
NGP2125L	2	3,18	–	0,19	2,79				●		●		●				
NGP3088L	3	2,24	–	0,19	2,39				●		●				●		
NGP3125L	3	3,18	–	0,19	3,81				●		●		●		●		
NGP3156L	3	3,96	–	0,19	3,81						●						
NGP3189L	3	4,80	–	0,57	3,81						●						
NGP4189L	4	4,80	–	0,57	6,35				●		●						
NGP4250L	4	6,35	–	0,57	6,35				●		●						

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

NGD • Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NGD3189R	3	4,80	–	0,57	6,35
NGD4250R	4	6,35	–	0,57	12,70
left hand					
NGD3189L	3	4,80	–	0,57	6,35
NGD4250L	4	6,35	–	0,57	12,70

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



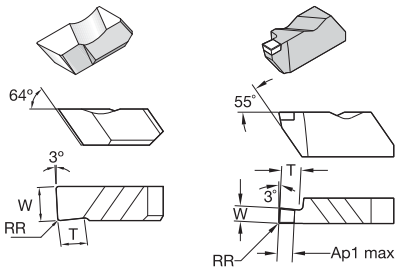
● first choice
○ alternate choice

		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

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGD2M150RK	2	1,50	1,09	0,19	4,06						●	●					
NGD2M200RK	2	2,00	1,09	0,19	5,08						●	●					
NGD2M250RK	2	2,50	1,09	0,19	5,08						●	●					
NGD3062RK	3	1,58	1,02	0,19	3,18	●			●	●	●	●					
NGD3M200RK	3	2,00	1,02	0,19	4,06				●		●	●					
NGD3094RK	3	2,39	1,02	0,19	6,35	●			●	●	●	●					
NGD3M250RK	3	2,50	1,02	0,19	6,35						●	●					
NGD3M300RK	3	3,00	1,02	0,19	6,35						●	●					
NGD3125RK	3	3,18	1,02	0,19	6,35	●			●	●	●	●					
NGD3M350RK	3	3,50	2,92	0,32	6,35						●	●					
NGD3M400RK	3	4,00	2,92	0,32	6,35						●	●					
NGD3189RK	3	4,80	2,92	0,57	6,35				●	●	●	●					
NGD4125RK	4	3,18	1,02	0,19	6,35				●	●	●	●					
NGD4M400RK	4	4,00	2,92	0,57	9,53						●	●					
NGD4M450RK	4	4,50	2,92	0,57	12,70						●	●					
NGD4189RK	4	4,80	2,92	0,57	9,53	●			●	●	●	●					
NGD4M500RK	4	5,00	2,92	0,57	12,70						●	●					
NGD4M550RK	4	5,50	3,81	0,57	12,70						●	●					
NGD4250RK	4	6,35	3,81	0,57	12,70	●			●	●	●	●					
left hand																	
NGD2M150LK	2	1,50	1,09	0,19	4,06						●	●					
NGD2M200LK	2	2,00	1,09	0,19	5,08						●	●					
NGD2M250LK	2	2,50	1,09	0,19	5,08						●	●					
NGD3062LK	3	1,58	1,02	0,19	3,18				●	●	●	●					
NGD3M200LK	3	2,00	1,02	0,19	4,06						●	●					
NGD3094LK	3	2,39	1,02	0,19	6,35	●			●	●	●	●					
NGD3M250LK	3	2,50	1,02	0,19	6,35						●	●					
NGD3M300LK	3	3,00	1,02	0,19	6,35						●	●					
NGD3125LK	3	3,18	1,02	0,19	6,35	●			●	●	●	●					
NGD3M350LK	3	3,50	2,92	0,32	6,35						●	●					
NGD3M400LK	3	4,00	2,92	0,32	6,35						●	●					
NGD3189LK	3	4,80	2,92	0,57	6,35				●	●	●	●					
NGD4125LK	4	3,18	1,02	0,19	6,35				●	●	●	●					
NGD4M400LK	4	4,00	2,92	0,57	9,53						●	●					
NGD4M450LK	4	4,50	2,92	0,57	12,70						●	●					
NGD4189LK	4	4,80	2,92	0,57	9,53				●	●	●	●					
NGD4M500LK	4	5,00	2,92	0,57	12,70						●	●					
NGD4M550LK	4	5,50	3,81	0,57	12,70						●	●					
NGD4250LK	4	6,35	3,81	0,57	12,70				●	●	●	●					

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



● first choice
○ alternate choice

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

NG-1L

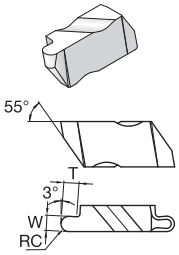
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
left hand																	
NG1031L	1	0,79	—	0,19	1,27					●		●					
NG1047L	1	1,19	—	0,19	1,91					●		●					
NG1062L	1	1,58	—	0,19	1,91					●		●					
NG1094L	1	2,39	—	0,19	1,91					●		●					

NOTE: Inserts have one cutting edge.
Width tolerance is ± .003 on NG-1L inserts.

NG-ST • Tipped Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NG3M200RS02020ST	3	2,00	2,00	0,20	2,39											●	●
NG3M300RS02020ST	3	3,00	3,00	0,20	3,81											●	●
NG3125RS0820ST	3	3,18	3,00	0,25	3,81											●	●
NG3M400RS02020ST	3	4,00	3,00	0,20	3,81											●	●
NG3189RS0820ST	3	4,81	3,00	0,25	3,81											●	●
left hand																	
NG3M200LS02020ST	3	2,00	2,00	0,20	2,39											●	●
NG3M300LS02020ST	3	3,00	3,00	0,20	3,81											●	●
NG3125LS0820ST	3	3,18	3,00	0,25	3,81											●	●
NG3M400LS02020ST	3	4,00	3,00	0,20	3,81											●	●
NG3189LS0820ST	3	4,81	3,00	0,25	3,81											●	●

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



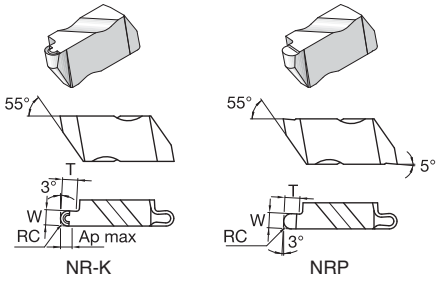
● first choice
○ alternate choice

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

NR • Full Radius Inserts

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NR2M050R	2	1,00	–	0,50	1,27			●	●	●	●	●					
NR2M075R	2	1,50	–	0,75	2,79			●	●		●						
NR2031R	2	1,58	–	0,79	2,79				●	●	●	●					
NR2M100R	2	2,00	–	1,00	2,79			●	●		●	●					
NR2047R	2	2,39	–	1,19	2,79					●		●					
NR2M125R	2	2,50	–	1,25	2,79			●				●					
NR2M150R	2	3,00	–	1,50	2,79			●				●					
NR2062R	2	3,18	–	1,59	2,79				●	●	●	●					
NR2M175R	2	3,50	–	1,75	2,79			●				●					
NR3031R	3	1,58	–	0,79	2,39	●			●	●	●	●					
NR3M100R	3	2,00	–	1,00	2,39			●				●					
NR3047R	3	2,39	–	1,19	3,81	●			●	●	●	●					
NR3M125R	3	2,50	–	1,25	3,81		●	●									
NR3M150R	3	3,00	–	1,50	3,81			●				●					
NR3062R	3	3,18	–	1,59	3,81	●			●	●	●	●					
NR3M175R	3	3,50	–	1,75	3,81			●									
NR3078R	3	3,96	–	1,98	3,81	●											
NR3M200R	3	4,00	–	2,00	3,81			●				●					
NR3M225R	3	4,50	–	2,25	3,81			●				●					
NR3094R	3	4,78	–	2,39	3,81	●			●	●	●	●					
NR4M200R	4	4,00	–	2,00	6,35			●									
NR4M225R	4	4,50	–	2,25	6,35			●									
NR4094R	4	4,78	–	2,39	6,35	●											
NR4M250R	4	5,00	–	2,50	6,35			●									
NR4125R	4	6,35	–	3,18	6,35	●			●	●	●	●					
left hand																	
NR2M050L	2	1,00	–	0,50	1,27			●	●	●	●	●					
NR2M075L	2	1,50	–	0,75	2,79			●									
NR2031L	2	1,58	–	0,79	2,79				●	●	●	●					
NR2M100L	2	2,00	–	1,00	2,79			●				●					
NR2047L	2	2,39	–	1,19	2,79					●		●					
NR2M125L	2	2,50	–	1,25	2,79			●				●					
NR2M150L	2	3,00	–	1,50	2,79			●				●					
NR2062L	2	3,18	–	1,59	2,79				●	●	●	●					
NR2M175L	2	3,50	–	1,75	2,79			●			●						
NR3031L	3	1,58	–	0,79	2,39	●			●	●	●	●					
NR3M100L	3	2,00	–	1,00	2,39			●				●					
NR3047L	3	2,39	–	1,19	3,81	●			●	●	●	●					
NR3M125L	3	2,50	–	1,25	3,81			●									
NR3M150L	3	3,00	–	1,50	3,81			●	●		●	●					
NR3062L	3	3,18	–	1,59	3,81	●			●	●	●	●					
NR3M175L	3	3,50	–	1,75	3,81			●									
NR3M200L	3	4,00	–	2,00	3,81			●				●					
NR3M225L	3	4,50	–	2,25	3,81			●				●					
NR3094L	3	4,78	–	2,39	3,81	●			●	●	●	●					
NR4M200L	4	4,00	–	2,00	6,35			●									
NR4M225L	4	4,50	–	2,25	6,35			●									
NR4M250L	4	5,00	–	2,50	6,35			●									
NR4125L	4	6,35	–	3,18	6,35				●	●	●	●					

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



● first choice
○ alternate choice

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

NR-K • Full Radius Inserts with Chip Control

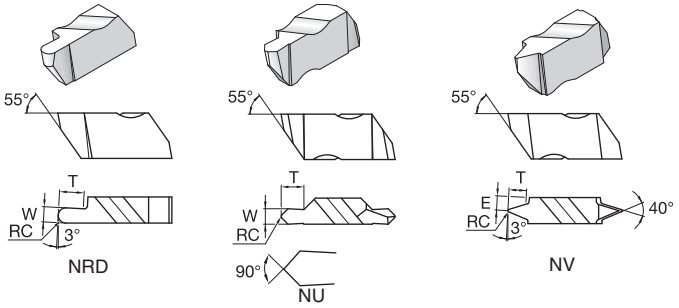
catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NR3031RK	3	1,58	1,98	0,79	2,39				●	●	●	●					
NR3047RK	3	2,39	1,91	1,19	3,81				●	●	●	●					
NR3062RK	3	3,18	2,92	1,59	3,81				●	●	●	●					
NR3078RK	3	3,96	2,54	1,98	3,81				●	●	●	●					
NR4062RK	4	3,18	2,92	1,59	3,81		●		●	●	●	●					
NR4094RK	4	4,78	3,81	2,39	6,35		●		●	●	●	●					
NR4125RK	4	6,35	3,81	3,18	6,35				●	●	●	●					
left hand																	
NR3031LK	3	1,58	1,98	0,79	2,39				●	●	●	●					
NR3047LK	3	2,39	1,91	1,19	3,81				●	●	●	●					
NR3062LK	3	3,18	2,92	1,59	3,81				●	●	●	●					
NR3078LK	3	3,96	2,54	1,98	3,81				●	●	●	●					
NR4062LK	4	3,18	2,92	1,59	3,81		●		●	●	●	●					
NR4094LK	4	4,78	3,81	2,39	6,35				●	●	●	●					
NR4125LK	4	6,35	3,81	3,18	6,35				●	●	●	●					

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

NRP • Full Radius Positive Rake Inserts

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NRP3031R	3	1,58	–	0,79	2,39				●		●		●				
NRP3047R	3	2,39	–	1,19	3,81	●			●		●						
NRP3062R	3	3,18	–	1,59	3,81				●		●						
NRP3094R	3	4,78	–	2,39	3,81				●		●						
left hand																	
NRP3031L	3	1,58	–	0,79	2,39				●		●						
NRP3047L	3	2,39	–	1,19	3,81				●		●						
NRP3062L	3	3,18	–	1,59	3,81				●		●						
NRP3094L	3	4,78	–	2,39	3,81				●		●						

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

catalogue number	insert size	W mm	Ap max mm	RC mm	T mm
right hand					
NRD3031R	3	1,58	–	0,79	3,18
NRD3062R	3	3,18	–	1,59	6,35
NRD4062R	4	3,18	–	1,59	6,35
NRD4094R	4	4,78	–	2,39	12,70
NRD4125R	4	6,35	–	3,18	12,70
left hand					
NRD3031L	3	1,58	–	0,79	3,18
NRD3062L	3	3,18	–	1,59	6,35
NRD4062L	4	3,18	–	1,59	6,35
NRD4094L	4	4,78	–	2,39	12,70
NRD4125L	4	6,35	–	3,18	12,70

NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.

NU

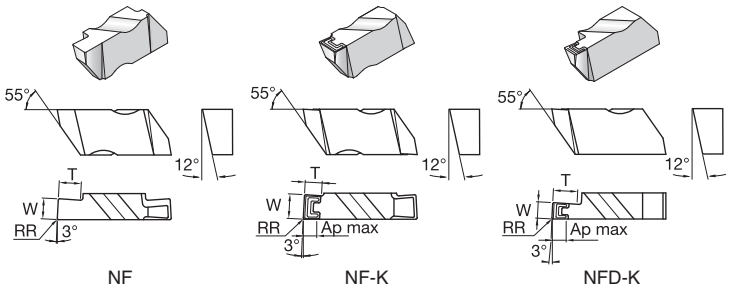
catalogue number	insert size	W mm	Ap max mm	RC mm	T mm.
right hand					
NU3094R	3	2,39	–	0,51	3,18
NU3125R	3	3,18	–	1,19	4,78
NU3156R	3	3,96	–	1,19	4,78
left hand					
NU3094L	3	2,39	–	0,51	3,18
NU3125L	3	3,18	–	1,19	4,78
NU3156L	3	3,96	–	1,19	4,78

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

catalogue number	insert size	E mm	RC mm	T mm
right hand				
NV3RJ	3	3,18	0,32	2,21
NV4RL	4	3,00	0,32	5,11
left hand				
NV3LJ	3	3,18	0,32	2,21
NV4LL	4	3,00	0,32	5,11

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



● first choice
○ alternate choice

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

NF • Face Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NF3125R	3	3,18	–	0,19	3,81	●											
NF3188R	3	4,78	–	0,57	3,81					●		●					
left hand																	
NF3125L	3	3,18	–	0,19	3,81	●											
NF3188L	3	4,78	–	0,57	3,81					●		●					

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

NF-K • Face Grooving Postive Rake Inserts

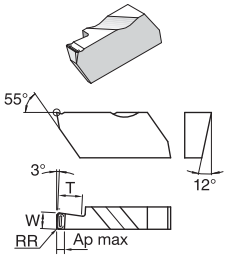
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NF3M200RK	3	2,00	1,02	0,19	1,78							●					
NF3M300RK	3	3,00	1,02	0,19	3,81							●					
NF3125RK	3	3,18	1,02	0,19	3,81					●		●					
NF3156RK	3	3,96	2,92	0,19	3,81					●		●					
left hand																	
NF3M200LK	3	2,00	1,02	0,19	1,78							●					
NF3M300LK	3	3,00	1,02	0,19	3,81							●					
NF3125LK	3	3,18	1,02	0,19	3,81					●		●					
NF3156LK	3	3,96	2,92	0,19	3,81					●		●					

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

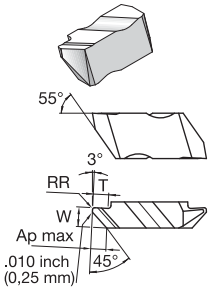
NFD-K • Face Grooving Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NFD3M300RK	3	3,00	1,02	0,19	6,35							●					
NFD3125RK	3	3,18	1,02	0,19	6,35					●		●					
NFD4189RK	4	4,80	2,92	0,57	9,53					●		●					
NFD4250RK	4	6,35	3,81	0,57	12,70					●		●					
left hand																	
NFD3M300LK	3	3,00	1,02	0,19	6,35							●					
NFD3125LK	3	3,18	1,02	0,19	6,35					●		●					
NFD4189LK	4	4,80	2,92	0,57	9,53					●		●					
NFD4250LK	4	6,35	3,81	0,57	12,70					●		●					

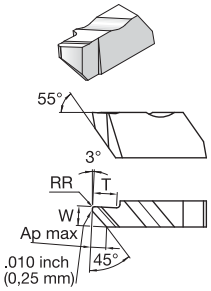
NOTE: Inserts have one cutting edge.
Right-hand insert shown; left-hand insert is mirror image.



NFD-KI



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												●	●

NFD-KI • Face Grooving Deep Grooving Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NFD3125RKI	3	3,18	1,02	0,19	6,35
NFD3156RKI	3	3,96	2,92	0,19	6,35
NFD3189RKI	3	4,80	2,92	0,57	6,35
left hand					
NFD3125LKI	3	3,18	1,02	0,19	6,35
NFD3189LKI	3	4,80	2,92	0,57	6,35

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 • Profiling Inserts

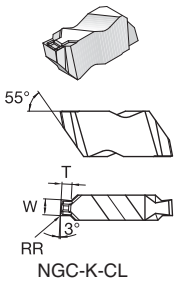
catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NP2002RK	2	3,68	–	0,09	2,79
NP2012RK	2	3,68	–	0,34	2,79
NP3002RK	3	4,83	–	0,09	5,08
NP3012RK	3	4,83	–	0,34	5,08

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

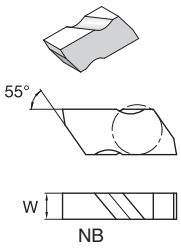
NPD-K • Profiling Deep Postive Inserts

catalogue number	insert size	W mm	Ap max mm	RR mm	T mm
right hand					
NPD2002RK	2	3,68	–	0,09	5,08
NPD3002RK	3	4,83	–	0,09	6,35
NPD3012RK	3	4,83	–	0,34	6,35

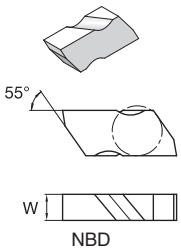
NOTE: Right-hand insert shown; left-hand insert is mirror image.
Tolerance on W ± 0,13mm (± .005").



NGC-K-CL



NB



NBD

● first choice
○ alternate choice

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

NGC-K • Groove and Chamfer

catalogue number	insert size	circlip size mm	W mm	RR mm	T mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand																	
NGC2C110R035K	2	1,10	1,19	0,08	0,35							●					
NGC2C110R040K	2	1,10	1,19	0,08	0,40							●					
NGC2C130R055K	2	1,30	1,39	0,08	0,55					●		●					
NGC2C160R070K	2	1,60	1,69	0,08	0,70							●					
NGC2C160R100K	2	1,60	1,69	0,08	1,00							●					
NGC2C185R100K	2	1,85	1,94	0,08	1,00							●					
NGC2C185R125K	2	1,85	1,94	0,08	1,25							●					
NGC2C215R150K	2	2,15	2,24	0,08	1,50					●		●					
NGC2C265R150K	2	2,65	2,74	0,08	1,50							●					
left hand																	
NGC2C110L040K	2	1,10	1,19	0,08	0,40							●					
NGC2C130L055K	2	1,30	1,39	0,08	0,55					●		●					
NGC2C160L070K	2	1,60	1,69	0,08	0,70							●					
NGC2C185L125K	2	1,85	1,94	0,08	1,25					●		●					
NGC2C215L150K	2	2,15	2,24	0,08	1,50					●		●					
NGC2C265L150K	2	2,65	2,74	0,08	1,50							●					
NGC2C265L175K	2	2,65	2,74	0,08	1,75					●		●					

NOTE: Groove and chamfer inserts for circlip grooves to DIN 471/472 specification.
Right-hand insert shown; left-hand insert is mirror image.

NB • Blanks

catalogue number	insert size	W mm	K313	KC9110	KC9320	KCU10	KCU25	KC5010	KC5025	KC5410	KT315	KD1425	KB1630	KB5625
right hand														
NB2R	2	3,81	●											
NB3R	3	4,95	●											
NB4R	4	6,48	●											
left hand														
NB2L	2	3,81	●											
NB3L	3	4,95	●											
NB4L	4	6,48	●											

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.

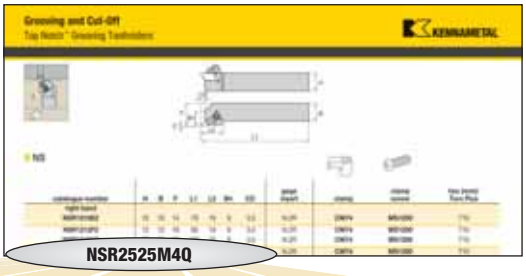
NBD • Deep Grooving Blanks

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

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.

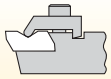
How Do Catalogue Numbers Work?

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

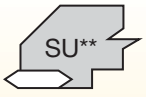


N	S	R		2525	M	4	Q
Insert Holding Method	Insert Mounting Location	Hand of Tool	Drop Head	Shank Size	Tool Length	Insert Size	Qualified Surface and Length

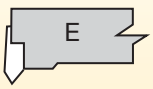
N = Top Notch*



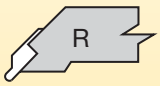
S = Insert Mounting Location



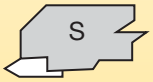
SU = Side mount utility**



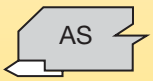
E = End



R = Undercut

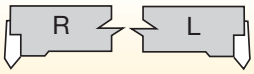


S = Side mount, offset

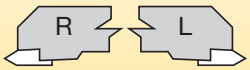


AS = side mount, no offset

R = Hand of Tool

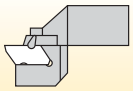


End mount



Side mount

DH = Drop Head



2525 = Shank Size

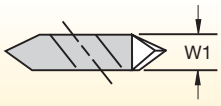
metric:
Shank height and width in mm and holder length according to ISO standard.

inch:
This position will show a significant two-digit number that indicates the holder cross section. For shanks 5/8" square and larger, the number will represent the number of sixteenths of width and height. For shanks under 5/8" square, the number of sixteenths of cross section will be preceded by a zero. For rectangular holders, the first digit represents the number of eighths of width and the second digit the number of quarters of height, except for a toolholder 1-1/4" x 1-1/2", which is given the number 91.

M = Tool Length

L1	ISO
32	A
40	B
50	C
60	D
70	E
80	F
90	G
100	H
110	J
125	K
140	L
150	M
160	N
170	P
180	Q
200	R
250	S
300	T
350	U
400	V
450	W
500	Y
Special Length	X

4 = Insert Size



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

Q = Qualified Surface and Length

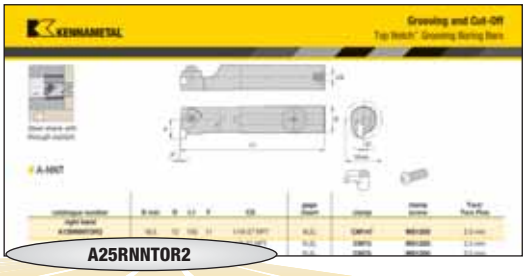
Q = Qualified metric holder

* Kennametal proprietary standard only.

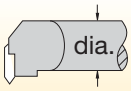
**Side mount utility holder can only use NTU inserts.

How Do Catalogue Numbers Work?

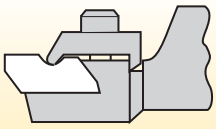
Each character in our catalogue number signifies a specific trait of that product. Use the following key columns and corresponding images to easily identify which attributes apply.



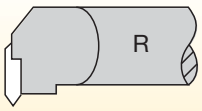
A	25	R	N	N	T	O	R	2
Bar Type	Bar Diameter	Bar Length	Insert Holding Method	Insert Shape	Insert Location	Rake Angle	Hand of Bar	Insert Size



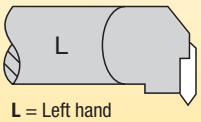
bar diameter in millimetres



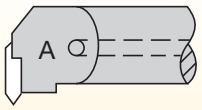
N* = Top Notch



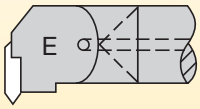
R = Right hand



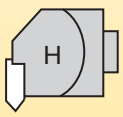
L = Left hand



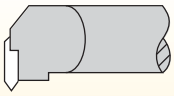
A = Steel with coolant



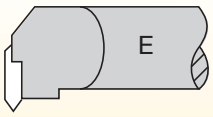
E = Carbide with coolant



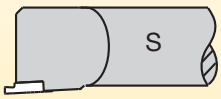
H = Interchangeable head



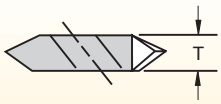
metric bars:
K = 125mm
M = 150mm
Q = 180mm
R = 200mm
S = 250mm
T = 300mm
U = 350mm



E = End mount

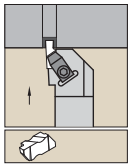


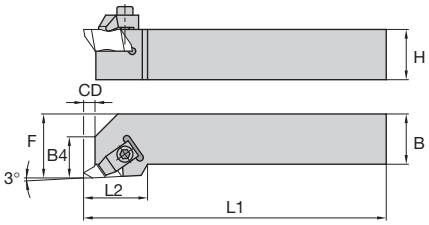
S = Straight mount



insert size	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

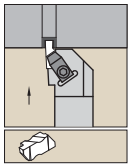
*Kennametal standard only.

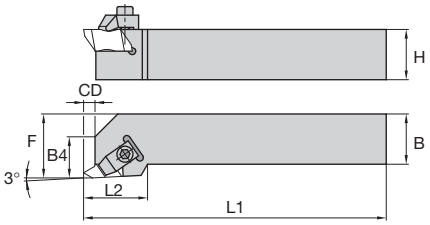




NS

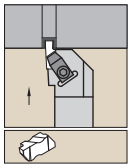
catalogue number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand											
NSR1010E2	10	10	14	70	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1212F2	12	12	16	80	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR1616H2	16	16	20	100	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K2	20	20	25	125	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2525M2	25	25	32	150	19	9	3,5	N.2R	**CM74**	**MS1200**	T10
NSR2020K3	20	20	25	125	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M3	25	25	32	150	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3225P3	32	25	32	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR3232P3	32	32	40	170	32	13	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NSR2525M4	25	25	32	150	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3225P4	32	25	32	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P4	32	32	40	170	35	14	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NSR3232P5	32	32	40	170	51	16	10,5	N.5R	**CM80**	**MS352**	6 mm
left hand											
NSL1010E2	10	10	14	70	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1212F2	12	12	16	80	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL1616H2	16	16	20	100	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K2	20	20	25	125	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2525M2	25	25	32	150	19	9	3,5	N.2L	**CM75**	**MS1200**	T10
NSL2020K3	20	20	32	125	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M3	25	25	32	150	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3225P3	32	25	32	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL3232P3	32	32	40	170	32	13	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NSL2525M4	25	25	32	150	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3225P4	32	25	32	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P4	32	32	40	170	35	14	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NSL3232P5	32	32	40	170	51	16	10,5	N.5L	**CM81**	**MS352**	6 mm

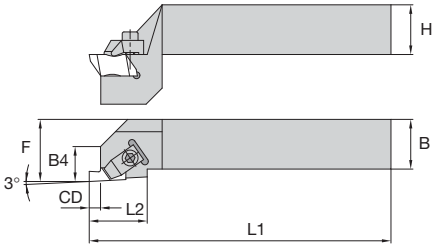




NAS

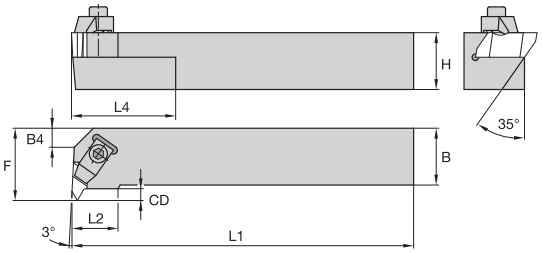
catalogue number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand													
NASR1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2R	**CM182**	**MS1200**	T10
NASR1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2R	**CM182**	**MS1200**	T10
NASR1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3R	**CM184LP**	**MS2111**	25 IP
left hand													
NASL1010M2Q	10	10	10	150	19	9	3,5	2,03	19	N.2L	**CM183**	**MS1200**	T10
NASL1212M2Q	12	12	12	150	19	9	3,5	—	—	N.2L	**CM183**	**MS1200**	T10
NASL1616K3Q	16	16	16	125	32	12	5,3	—	—	N.3L	**CM185LP**	**MS2111**	25 IP





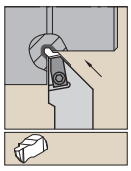
NS-DH

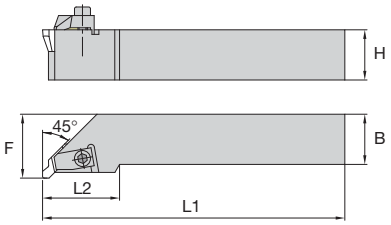
catalogue number	H	B	F	L1	L2	B4	CD	B3	L3	gage insert	clamp	clamp screw	hex (mm)/ Torx Plus
right hand													
NSRDH2020K2	20	20	25	125	19	9	3,5	—	—	N.2R	**CM74**	**MS1200**	T10
NSRDH2525M2	25	25	32	150	19	9	3,5	—	—	N.2R	**CM74**	**MS1200**	T10
NSRDH2525M3	25	25	32	150	32	13	5,3	—	—	N.3R	**CM72LP**	**MS2111**	25 IP
NSRDH3232P3	32	32	40	170	32	13	5,3	—	—	N.3R	**CM72LP**	**MS2111**	25 IP



NE


catalogue number	H	B	F	L1	L2	B4	CD	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand											
NER1616H2	16	16	20	100	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2020K2	20	20	25	125	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2525M2	25	25	32	150	15	–	3,5	N.2L	**CM75**	**MS1200**	T10
NER2525M3	25	25	32	150	22	–	5,3	N.3L	**CM73LP**	**MS2111**	25 IP
NER3225P3	32	25	32	170	22	–	3,8	N.3L	**CM73LP**	**MS2111**	25 IP
NER2525M4	25	25	35	150	24	–	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NER3225P4	32	25	35	170	24	–	7,5	N.4L	**CM73LP**	**MS2111**	25 IP
NER3232P4	32	32	40	170	24	–	6,4	N.4L	**CM73LP**	**MS2111**	25 IP
left hand											
NEL1616H2	16	16	20	100	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2020K2	20	20	25	125	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2525M2	25	25	32	150	15	–	3,5	N.2R	**CM74**	**MS1200**	T10
NEL2525M3	25	25	32	150	22	–	5,3	N.3R	**CM72LP**	**MS2111**	25 IP
NEL3225P3	32	25	32	170	22	–	3,8	N.3R	**CM72LP**	**MS2111**	25 IP
NEL2525M4	25	25	35	150	24	–	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3225P4	32	25	35	170	24	–	7,5	N.4R	**CM72LP**	**MS2111**	25 IP
NEL3232P4	32	32	40	170	24	–	6,4	N.4R	**CM72LP**	**MS2111**	25 IP

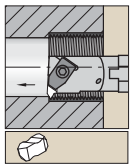




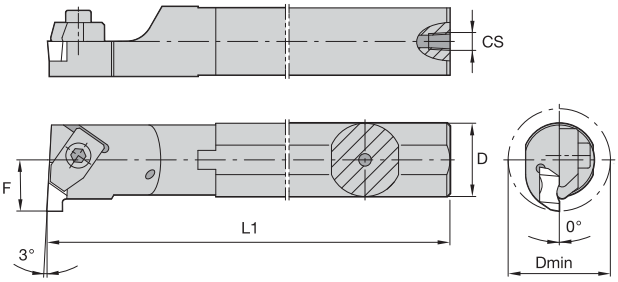
NR


catalogue number	H	B	F	L1	L2	gage insert	clamp	clamp screw	Torx Plus
right hand									
NRR2020K3	20	20	25	125	32	NU3125L	**CM73LP**	**MS2111**	25 IP
NRR2525M3	25	25	32	150	32	NU3125L	**CM73LP**	**MS2111**	25 IP
NRR3225P3	32	25	32	170	32	NU3125L	**CM73LP**	**MS2111**	25 IP
left hand									
NRL2020K3	20	20	25	125	32	NU3125R	**CM72LP**	**MS2111**	25 IP
NRL2525M3	25	25	32	150	32	NU3125R	**CM72LP**	**MS2111**	25 IP
NRL3225P3	32	25	32	170	32	NU3125R	**CM72LP**	**MS2111**	25 IP

NOTE: NR-style toolholders are compatible with “NU” style inserts only.



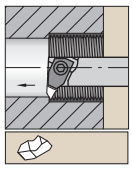
Steel shank with through coolant.



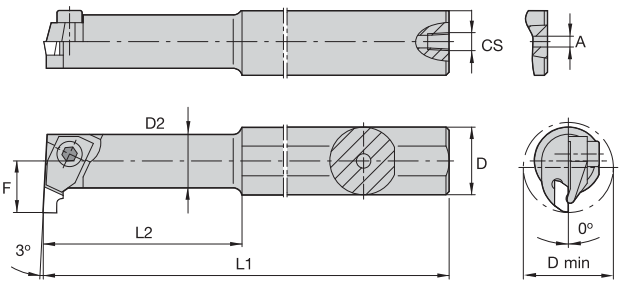
A-NNT

catalogue number	D min	D	L1	F	CS	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand									
A12MNNTOR2	18,5	12	150	11	1/16-27 NPT	N.2L	**CM147**	**MS1200**	2.5 mm
A16MNNTOR2	22,0	16	150	11	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A20QNNTOR2	26,0	20	180	13	1/8-27 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR2	34,0	25	200	17	1/4-18 NPT	N.2L	**CM75**	**MS1200**	2.5 mm
A25RNNTOR3	34,0	25	200	17	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A32SNNTOR3	44,0	32	250	22	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR3	54,0	40	300	27	1/4-18 NPT	N.3L	**CM73LP**	**MS2111**	25 IP
A40TNNTOR4	54,0	40	300	27	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
A50UNNTOR4	70,0	50	350	35	1/4-18 NPT	N.4L	**CM73LP**	**MS2111**	25 IP
left hand									
A12MNNTOL2	18,5	12	150	11	1/16-27 NPT	N.2R	**CM146**	**MS1200**	2.5 mm
A16MNNTOL2	22,0	16	150	11	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A20QNNTOL2	26,0	20	180	13	1/8-27 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL2	34,0	25	200	17	1/4-18 NPT	N.2R	**CM74**	**MS1200**	2.5 mm
A25RNNTOL3	34,0	25	200	17	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A32SNNTOL3	44,0	32	250	22	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL3	54,0	40	300	27	1/4-18 NPT	N.3R	**CM72LP**	**MS2111**	25 IP
A40TNNTOL4	54,0	40	300	27	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP
A50UNNTOL4	70,0	50	350	35	1/4-18 NPT	N.4R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.



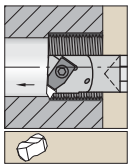
Necked steel shank with through coolant.



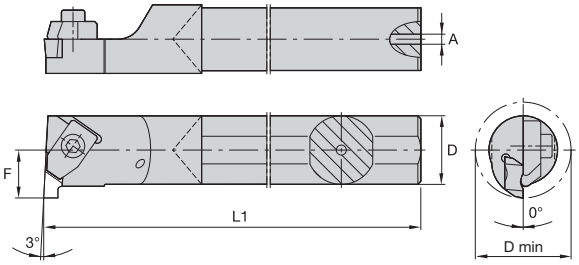
A-NNT -1

catalogue number	D min	D	D2	L1	L2	F	A	CS	gage insert	clamp	clamp screw	hex (mm)
right hand												
A10KNNTOR1	11,5	10	8,7	125	31,75	7	3,2	–	N.1L	**CM109**	**MS1034**	1.5 mm
A12MNNTOR1	11,5	12	8,7	150	31,30	7	4,0	1/16-27 NPT	N.1L	**CM109**	**MS1034**	1.5 mm

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.



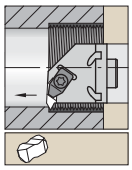
Carbide shank with through coolant.



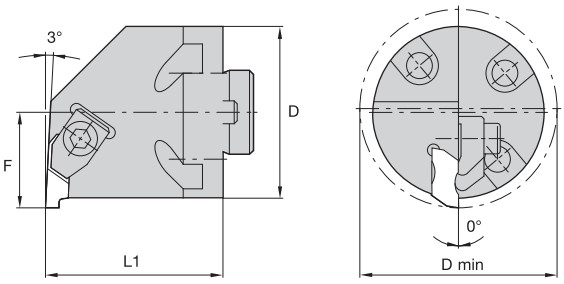
E-NNT


catalogue number	D min	D	L1	F	A	CS	gage insert	clamp	clamp screw	Torx/ Torx Plus
right hand										
E16RNNTOR2	22	16	200	11	5,537	–	N.2L	**CM75**	**MS1200**	T10
E20SNNTOR2	26	20	250	13	7,137	–	N.2L	**CM75**	**MS1200**	T10
E25TNNTOR3	34	25	300	17	7,935	–	N.3L	**CM73LP**	**MS2111**	25 IP
left hand										
E16RNNTOL2	22	16	200	11	5,537	–	N.2R	**CM74**	**MS1200**	T10
E20SNNTOL2	26	20	250	13	7,137	–	N.2R	**CM74**	**MS1200**	T10
E25TNNTOL3	34	25	300	17	7,935	–	N.3R	**CM72LP**	**MS2111**	25 IP

NOTE: Minimum bore capability varies with depth of groove. See page D144 for details.

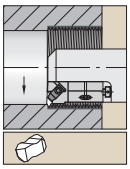


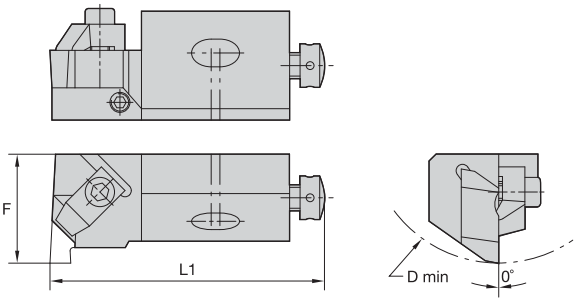
With through coolant.



H-NNT


catalogue number	D	D min	F	L1	gage insert	clamp	clamp screw	Torx Plus
right hand								
H32NNTOR3	32,0	44,0	22	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H40NNTOR3	40,0	54,0	27	41,3	N.3L	**CM73LP**	**MS2111**	25 IP
H60NNTOR4	60,0	73,2	43	41,3	N.4L	**CM73LP**	**MS2111**	25 IP
left hand								
H32NNTOL3	32,0	44,0	22	41,3	N.3R	**CM72LP**	**MS2111**	25 IP
H40NNTOL3	40,0	54,0	27	41,3	N.3R	**CM72LP**	**MS2111**	25 IP





NE

catalogue number	D min	F	L1	gage insert	clamp	clamp screw	hex	radial adjusting screw	hex	axial adjusting screw	mounting screw	washer	hex
right hand													
NER12CA2	50,0	20,0	56	N.2L	**CM75**	**191.406**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**MS1025**	**CSWM 060 050**	4 mm
NER20CA2	70,0	25,0	70	N.2L	**CM75**	**191.407**	2.5 mm	**KUAM25**	2.5 mm	**KUAM33**	**MS1025**	**CSWM 080 050**	5 mm
NER25CA3	100,0	32,0	100	N.3L	**CM73LP**	**—**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm
NER25CA4	100,0	32,0	100	N.4L	**CM73LP**	**—**	4 mm	**KUAM27**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm
left hand													
NEL12CA2	50,0	20,0	55	N.2R	**CM74**	**191.406**	2.5 mm	**KUAM23**	2.5 mm	**KUAM31**	**MS1025**	**CSWM 060 050**	4 mm
NEL25CA3	100,0	32,0	100	N.3R	**CM72LP**	**—**	4 mm	**KUAM26**	4 mm	**KUAM33**	**MS364**	**CSWM 100 080**	6 mm

NOTE: Minimum bore diameter (D min) capability varies with groove type.
F dimension measured over the flat point of the Top Notch style grooving insert.

Machining Guidelines for Chip Control • Grooving

- Center height of insert should be positioned at the center of the workpiece, or up to 0,13mm (.005") 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 0,08–0,3 mm/rev (.003–0.012 IPR).

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) 0,79–1,6mm (.031–062") wide insert can cut up to 0,6mm (.025") deep.
  2) 1,7–3,3mm (.067–.128") wide insert can cut up to 1mm (.040") deep.
  3) 3,5–4,8mm (.138–.189") wide insert can cut up to 2mm (.080") deep.
  4) 5–9,5mm (.197–.375") wide insert can cut up to 3mm (.120") deep.

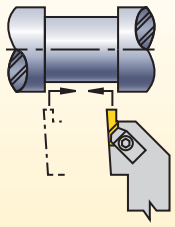
Groove Limits (Maximum Internal Groove Depth vs. Minimum Bore Diameter)

	maximum groove depth	minimum bore diameter
insert	mm	mm
NG-1094L	1,91	20,32
	1,02	11,18
NG-2031R/L	1,27	18,54
NG-2041R/L		
NG-2047R/L		
NG-2058R/L		
	2,79	63,50
NG-2062R/L	2,59	44,45
NG-2094R/L	2,49	38,10
NG-2125R/L	2,03	25,40
	1,40	18,54
NG-3047R/L		
NG-3062R/L	2,39	44,45
NG-3072R/L	2,29	41,28
NG-3078R/L	1,91	34,93
NG-3088R/L		
NG-3094R/L		
NG-3097R/L	3,81	60,33
NG-3105R/L		
NG-3110R/L	3,68	53,98
NG-3122R/L		
NG-3125R/L	3,51	47,63
NG-3142R/L		
NG-3156R/L	3,18	41,28
NG-3178R/L		
NG-3185R/L	2,79	34,93
NG-3189R/L		
NG-4125R/L	3,81	69,85
	6,35	146,05
NG-4189R/L	6,22	127,00
NG-4213R/L	6,10	114,30
NG-4219R/L	5,54	82,55
NG-4250R/L	5,08	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.

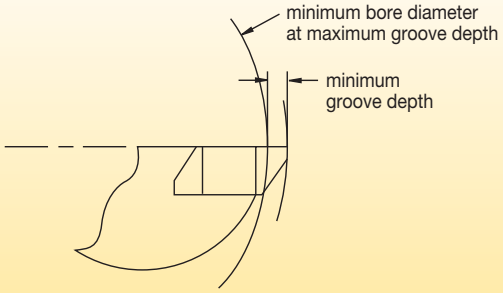
Finish Turning the Groove

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	mm	mm
	9,53	731,82
NG-5250R/L	9,17	401,62
NG-5281R/L	8,74	274,62
NG-5312R/L	8,31	185,72
NG-5344R/L	7,47	122,22
NG-5375R/L	6,53	90,47
	5,46	71,42
NG-6250R/L	6,35	146,05
NG-6281R/L	6,22	127,00
NG-6312R/L	6,10	114,30
NG-6344R/L	5,54	82,55
NG-6375R/L	5,08	63,50

Internal Groove Depth vs. Bar Interference



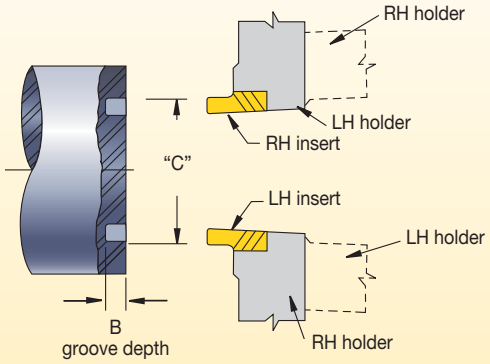
NOTE: Internal grooving depth limits are a function of bar clearance versus bore diameters.

Machining Guidelines for Face Grooving Operations • External

Standard NF/NFD Inserts

insert family	maximum groove depth "B" mm	minimum groove diameter "C" mm
NF-3	1,52	23,9
NF-3	2,39	30,5
NF-3	3,18	36,1
NF-3	3,81	41,3
NFD-3	6,35	47,6
NF-4/6	1,52	23,9
NF-4/6	2,39	30,5
NF-4/6	3,18	36,1
NF-4/6	3,81	41,3
NF-4/6	4,78	47,6
NF-4/6	6,35	57,2
NFD-4	9,53	57,2
NFD-4	12,70	57,2

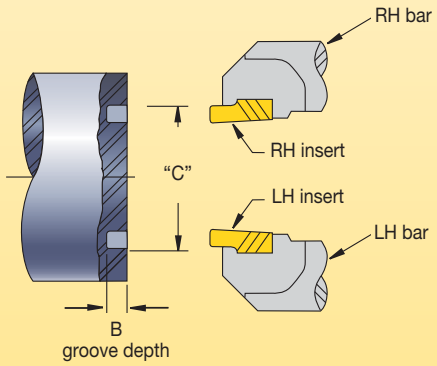
Toolholders



Standard NG/NGD Inserts

insert family	maximum groove depth "B" mm	minimum groove diameter "C" mm
NG-2	1,27	54,0
NG-2	2,79	88,9
NG-3	2,39	101,6
NG-3	3,18	127,0
NG-3	3,81	139,7
NGD-3	6,35	174,6
NG-4	3,81	152,4
NG-4	6,35	209,6
NGD-4	9,53	222,3
NGD-4	12,70	222,3
NG-5	9,53	333,0

Boring bars

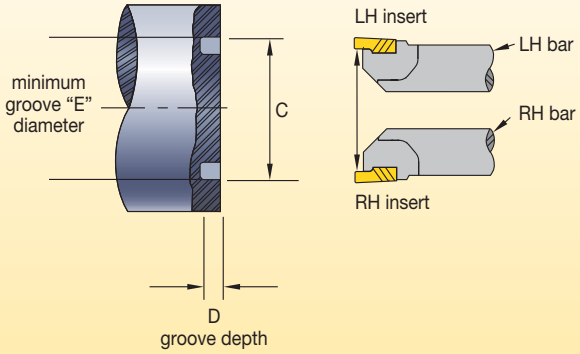


Machining Guidelines for Face Grooving Operations • Internal

insert family	maximum groove depth "D" mm	minimum groove diameter "E" mm
NFD-3-KI	6,35	57,2

NOTE: For internal applications, use only NFD-KI inserts.

Boring bars



KGF and KGT Cut-Off Inserts

Primary Application

KGT and KGF inserts specifically designed to fit SELF-GRIP® toolholders available from Iscar®. For traditional cut-off applications, the original KGT-style inserts are available in widths ranging from 2,25–4,80mm. For increased stability in large diameter cut-off applications, the KGF geometry is available in widths ranging from 1,60–9,50mm.

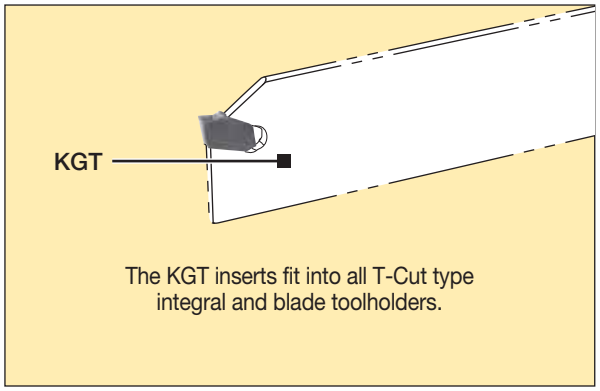
Features and Benefits

KGT Inserts

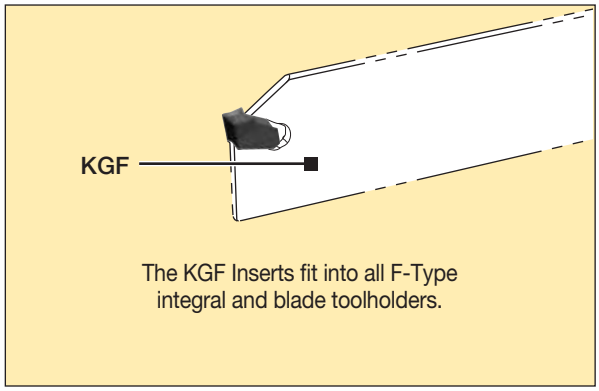
- KGT inserts are T-Type with no stopper. The KGT inserts replace single-end cutting inserts.

KGF Inserts

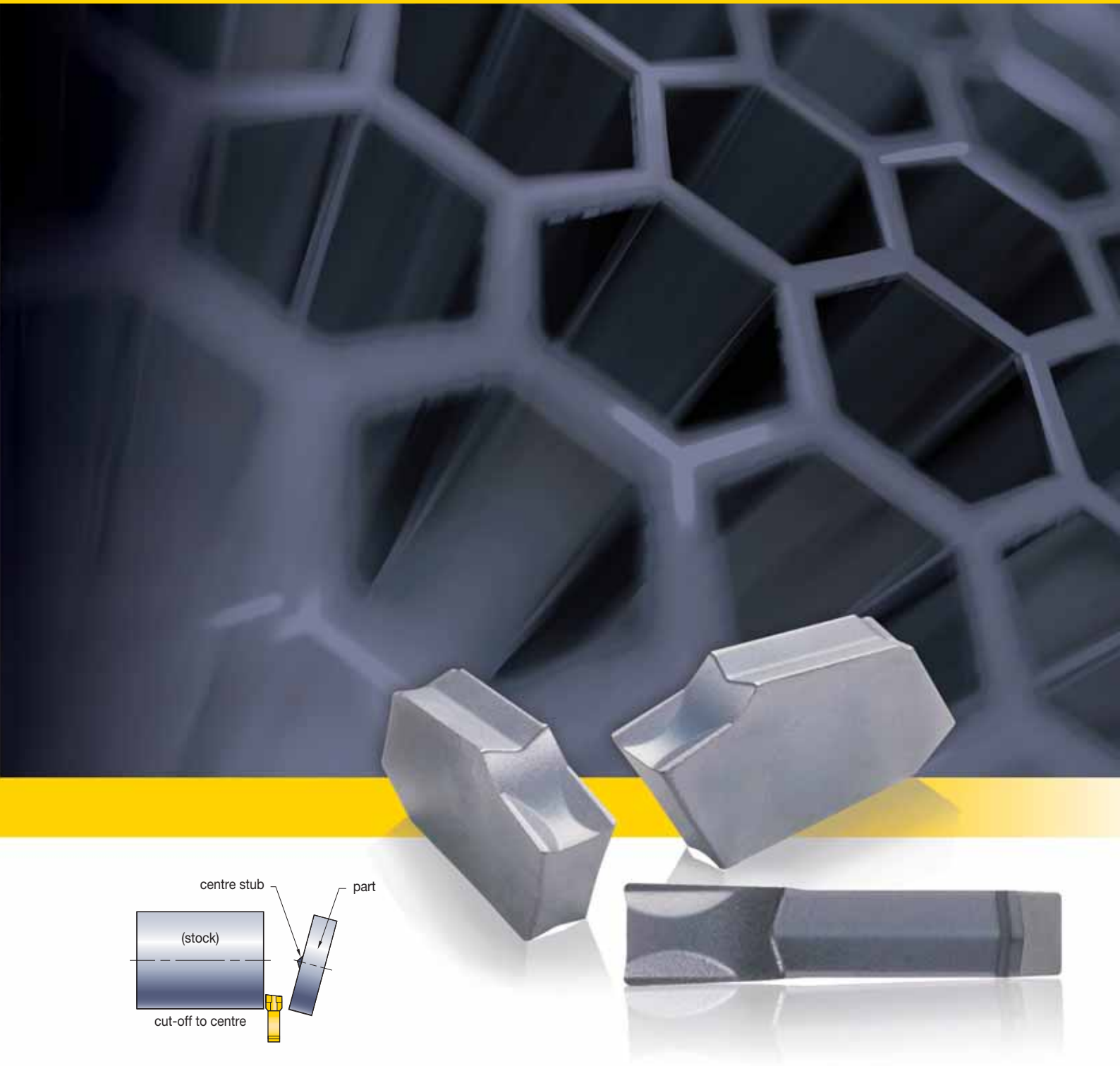
- Single-side insert for cut-off applications. This insert has a hard stop that seats insert securely into the pocket.



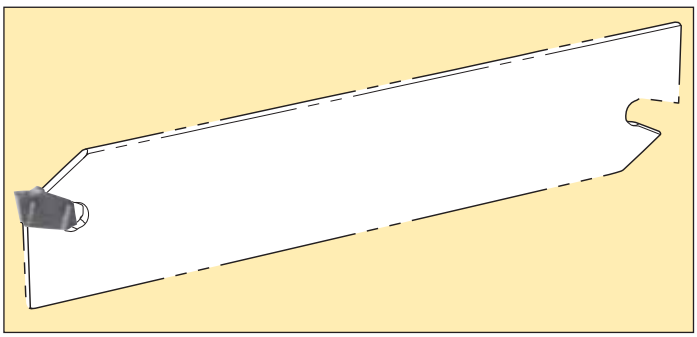
The KGT inserts fit into all T-Cut type integral and blade toolholders.

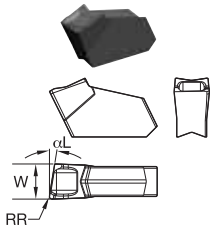


The KGF Inserts fit into all F-Type integral and blade toolholders.

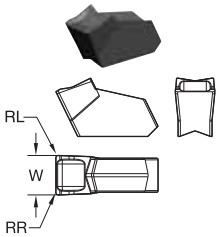


centre stub
part
(stock)
cut-off to centre

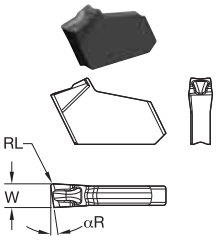




KGF-L



KGF



KGF-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGF-L

catalogue number	W mm	αL	RR mm	KC5025
KGFL38D	3,00	8	0,25	●
KGFL48D	4,09	8	0,28	●

NOTE: RR = RL on neutral inserts

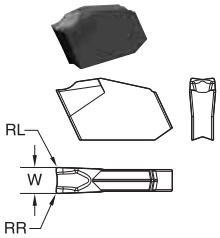
KGF

catalogue number	W mm	RL mm	
KGFN16	1,60	0,16	●
KGFN2J	2,00	0,16	●
KGFN2	2,20	0,16	●
KGFN24	2,40	0,16	●
KGFN3	3,00	0,25	●
KGFN3J	3,00	0,25	●
KGFN3M	3,03	0,20	●
KGFN4J	4,00	0,25	●
KGFN4	4,10	0,28	●
KGFN4B	4,10	0,40	●
KGFN48	4,80	0,28	●
KGFN6	6,39	0,35	●
KGFN9	9,50	0,47	●

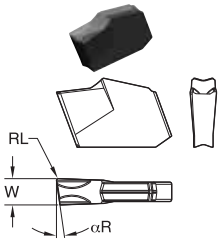
NOTE: RR = RL on neutral inserts

KGF-R

catalogue number	W mm	αR	RL mm	
KGFR168D	1,60	8	0,16	●
KGFR248D	2,39	8	0,16	●
KGFR315D	3,00	15	0,25	●
KGFR38D	3,00	8	0,25	●
KGFR34D	3,00	4	0,25	●



KGT-N



KGT-R

● first choice
○ alternate choice

P	
M	○
K	
N	
S	○
H	

KGT-N

catalogue number	W mm	RL mm	KC5025
KGTN2	2,25	0,18	●
KGTN24	2,40	0,18	●
KGTN3J	3,05	0,22	●
KGTN3	3,05	0,22	●
KGTN3W	3,05	0,22	●
KGTN4	4,05	0,24	●
KGTN48	4,80	0,26	●
KGTN5	5,05	0,26	●
KGTN6	6,45	0,28	●

NOTE: RR = RL on neutral inserts

KGT-R

catalogue number	W mm	αR	RL mm	
KGTR28D	2,25	8	0,18	●
KGTR24D	2,25	4	0,18	●
KGTR248D	2,40	8	0,18	●
KGTR244D	2,40	4	0,18	●
KGTR38D	3,05	8	0,22	●
KGTR34D	3,05	4	0,22	●
KGTR44D	4,05	4	0,24	●