

FIRST CHOICE

KEEPS YOU RUNNING

2nd
EDITION



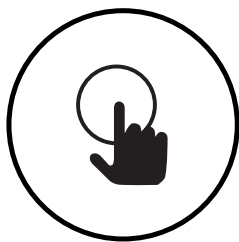
Distributed By:



First Choice Keeps You Running

Easy to select, easy to order, easy to apply, exceptional performance — that's First Choice! The most versatile high-performing products from Kennametal, covering 80% of the applications you machine on a daily basis.

You can count on us to keep your operations running!



Easy

Easy to select, easy to order,
easy to apply.

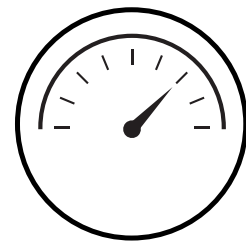
Whether you browse through
the catalogue or online, with
First Choice everything
will be easy.

Application data and ordering
information at your fingertips.



Premium Shipping

First Choice product
availability ensures orders
received by 6pm (CET) are
shipped the same day.



Premium Performance

Do more with less.

First Choice delivers
versatile, high-performing
products resulting in
optimum machine utilisation.

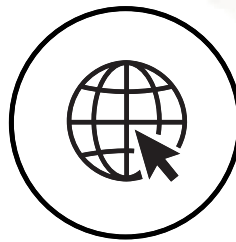


Premium Support

First Choice isn't just tooling;
it's an experience.

Need assistance with tool
selection and performance
optimisation?

No problem, call our customer
application support (CAS) today.
See page ii, for your local (CAS)
region number.



Digital

Easily identify First Choice
products throughout your
digital experience.

Kennametal Konnect —
Order 24/7

NOVO™ — Selection made easy

Apps — Mobile Access

CAS — Customer Application Support

Get Fast and Reliable Answers to Your Toughest Problems

Our CAS Team is the metalworking industry's leading help desk resource for tooling application solutions and problem resolution.

Easy Access to Proven Metalworking Expertise!

Kennametal Application Engineers assist customers and engineering groups throughout the world with expert tool selection and application recommendations for the entire range of Kennametal tooling.



Region	Originating Country	Language	CAS Hotline	Email
Africa	South Africa	English	0800 981643	na.techsupport@kennametal.com
Europe	Austria	German	0800 202873	eu.techsupport@kennametal.com
	Belgium	English/French	0800 80850	eu.techsupport@kennametal.com
	Denmark	English	808 89298	na.techsupport@kennametal.com
	Finland	English	0800 919412	na.techsupport@kennametal.com
	France	French	080 5540 367	eu.techsupport@kennametal.com
	Germany	German	0800 0006651	eu.techsupport@kennametal.com
	Israel	English	1809 449889	na.techsupport@kennametal.com
	Italy	Italian	800 916561	eu.techsupport@kennametal.com
	Netherlands	English	0800 0201 130	eu.techsupport@kennametal.com
	Norway	English	800 10080	na.techsupport@kennametal.com
	Poland	Polish	0080 04411887	eu.techsupport@kennametal.com
	Russia (landline)	Russian	8800 5556394	eu.techsupport@kennametal.com
	Russia (cell phone)	Russian	+7 800 5556394	eu.techsupport@kennametal.com
Sweden	English	0207 99246	na.techsupport@kennametal.com	
UK	English	0800 032 8339	na.techsupport@kennametal.com	
Ukraine	Russian	800 502664	eu.techsupport@kennametal.com	

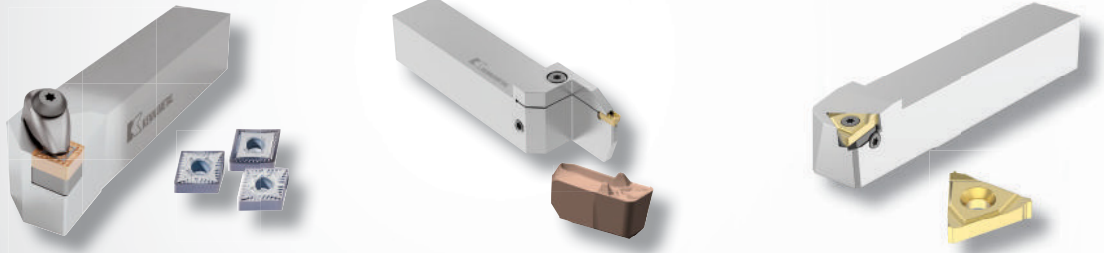
Numbers shown only serve the originating country listed.

Service & Sales Centres Around the World

Region	Country	Sales Hotline	Email
Africa	Egypt	+44 1384 408060	na.techsupport@kennametal.com
	South Africa	+27 11 748 9300	na.techsupport@kennametal.com
Europe	Austria	+43 2236 3798980	brunn.sales@kennametal.com
	Belgium	+32 0800 81 372	belgium.sales@kennametal.com
	Czech Republic	+420 800 900 840	k-prha.sales@kennametal.com
	France	+33 1 60 12 81 00	info.fr@kennametal.com
	Germany	+49 6003 8277 0	rosbach.sales@kennametal.com
	Great Britain	+44 1384 408060	kingswinford.service@kennametal.com
	Hungary	+36 96 618 150	gyoer.sales@kennametal.com
	Ireland	+44 1384 408060	na.techsupport@kennametal.com
	Italy	+39 02 895 961	milano.vendite@kennametal.com
	Luxemborg	+32 4 248 48 48	liege.sales@kennametal.com
	Netherlands	+31 0800 44 33 201	netherlands.sales@kennametal.com
	Poland	+48 61 6656501	poland.service@kennametal.com
	Portugal	+351 22 4119 400	porto.service@kennametal.com
	Russia	+7 495 4115386	moscow.information@kennametal.com
	Slovakia	+421 0800 044 053	k-eu-zilina.sales@kennametal.com
Spain	+34 93 586 03 50	barcelona.service@kennametal.com	
Turkey	+90 216 574 4780	tr.information@kennametal.com	

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ISO Turning, Grooving, Cut-Off, and Threading



Indexable Milling and Solid End Milling



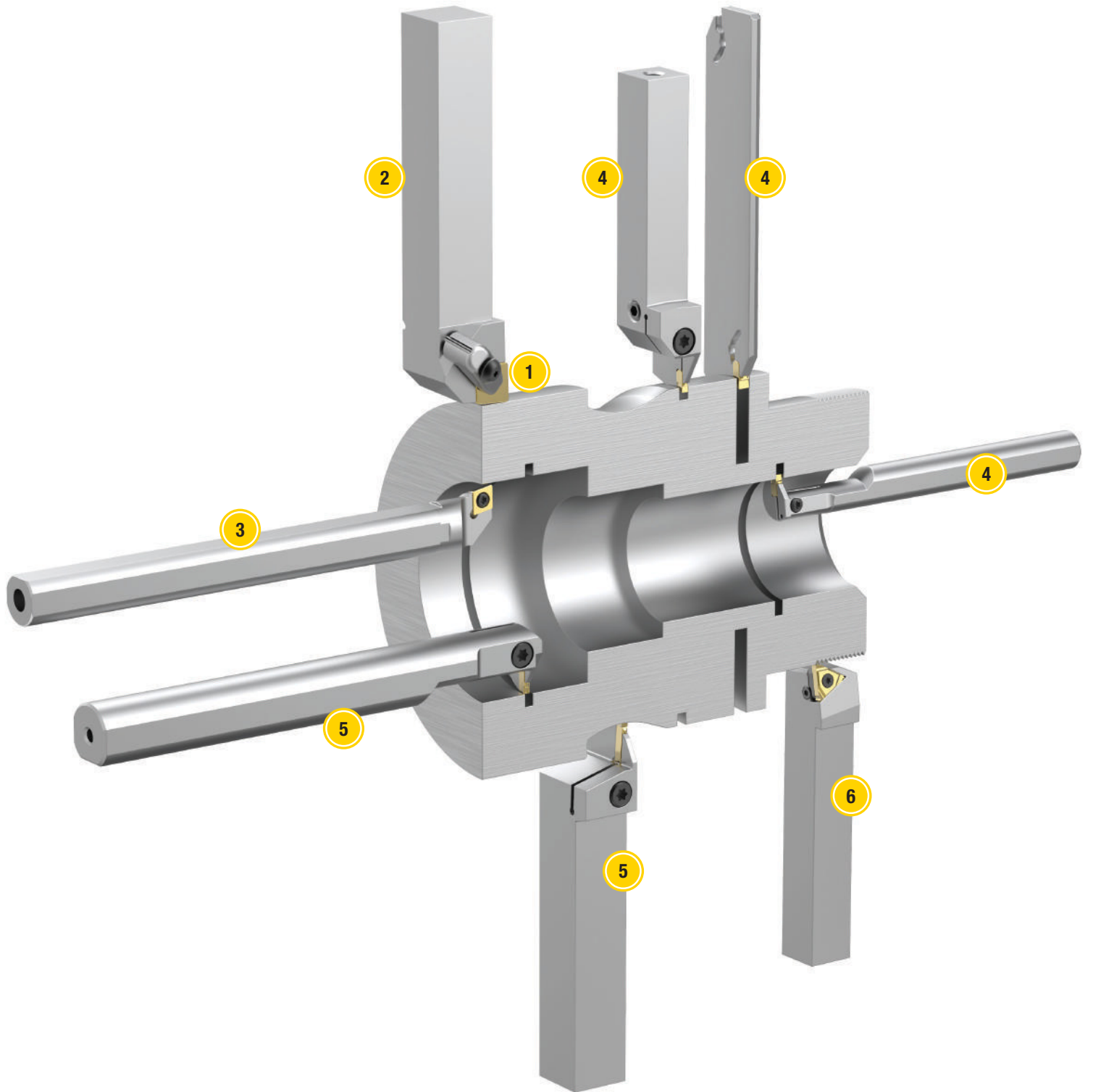
Holemaking and Tapping



Tooling Systems



Turning, Grooving, Cut-Off, and Threading



Turning

ISO Turning

1	ISO Turning Inserts	A2–A29
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	Toolholders for Positive Inserts (Screw-On)	A39–A45
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➤ ISO Turning Inserts, Toolholders, and Boring Bars

Modern CNC machines and flexible production facilities require tools with application versatility. Kennametal high-performance inserts, toolholders, and boring bars are designed to handle any turning application. Whether you're cutting steel or titanium, or doing light finishing or heavy roughing, we have the tooling solution to meet your needs.

beyond

beyond DRIVE™

Features and Benefits

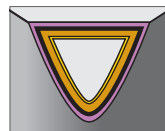
Beyond™ Drive™ Inserts • Technology Details

Post-Coat Grinding — Top and Bottom

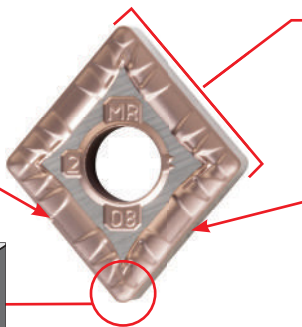
- Provides secure seating surface.

Fine-Grained Alumina Layer

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



TiN/MT-TiCN/TiCN/Al₂O₃/TiCN



Post-Coat Treatment

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

Micro-Polished Edges

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

Beyond™ PVD Grades

KCU10™ Grade

- Superior wear resistance and faster cutting speeds at higher temperatures.
- Ideal for stainless steels and high-temp alloys.
- Improved depth-of-cut notch resistance.
- Use in finishing to medium applications.

KCU25™ Grade

- Superior edge toughness.
- Excellent wear resistance.
- Use in medium to roughing applications.



Quick and Easy Turning Insert Selection

- All information on one page.
- Inserts already pre-selected by material.
- All necessary technical data included.

All inserts are already pre-selected by the workpiece material group:

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

Not sure which group your material belongs to? See page E8 for further details.

The headline guides you to the right geometry. Sequence within each material group is from roughing to finishing.

The cutting conditions guide you to the First Choice grade:

- Smooth cut, pre-turned surface.
- Varying depths of cut, casting or forging skin.
- Lightly interrupted cut.
- Heavily interrupted cut.

Turning Inserts • Carbide

Steel Medium Machining



cutting conditions												
	P0/P1	140 395 450	135 275 360	130 210 240	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
cutting speed (m/min)	P2	180 265 350	135 195 320	130 150 230								
range	P3	170 190 250	135 155 230	100 120 170								
	P4	90 145 200	70 105 180	50 95 140								
carbide grade		KCP10B	KCP25B	KCP40B								
ISO catalogue number		KCP10B	KCP25B	KCP40B	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
		-	5694080	-	9,67	0,4	0,30	0,80	2,50	0,12	0,20	0,25
		5697917	5694081	-	9,67	0,8	0,50	1,30	3,50	0,15	0,35	0,50
		5697921	5694082	5591773	12,90	0,4	0,30	0,80	3,50	0,12	0,20	0,25
		5388036	5387662	5596457	12,90	0,8	0,50	1,30	4,50	0,15	0,35	0,50
		CNMG120412MN	5387667	5591716	12,90	1,2	0,70	2,00	5,00	0,17	0,40	0,55
		5697929	5694085	-	12,90	1,6	0,90	2,50	5,00	0,30	0,50	0,60
		5697931	5694086	-	16,12	0,8	0,50	1,30	5,50	0,15	0,35	0,50
		5413178	5413179	-	16,12	1,2	0,70	2,00	6,00	0,17	0,40	0,60

Select preferred insert style, size, and corner radius.

Insert order code.

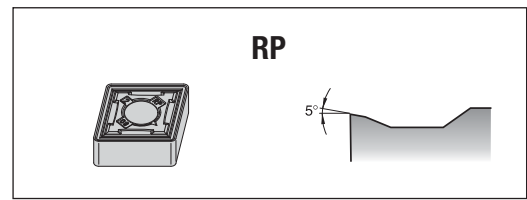
Material-specific surface speed.

Insert specific depth of cut and feed rates.

The table directly provides you with all the application-specific cutting data for the inserts you have selected. Bold numbers are starting values.



cutting conditions				
cutting speed (m/min) range	P0/P1	140 395 450	135 275 360	130 210 240
	P2	180 265 350	135 195 320	130 150 230
	P3	170 190 250	135 155 230	100 120 170
	P4	90 145 200	70 105 180	50 95 140
	P5	150 215 300	120 195 270	110 135 150
	P6	110 180 270	105 150 220	80 105 140
carbide grade		KCP10B	KCP25B	KCP40B



ISO catalogue number	KCP10B	KCP25B	KCP40B	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG120404RP	-	5694083	-	12,90	0,4	0,60	2,00	3,50	0,18	0,30	0,40
CNMG120408RP	5388039	5387665	-	12,90	0,8	1,00	3,00	4,50	0,20	0,45	0,60
CNMG120412RP	5413174	5413175	5886541	12,90	1,2	1,20	3,50	5,00	0,22	0,50	0,65
CNMG120416RP	5413176	5413177	-	12,90	1,6	1,40	4,00	5,00	0,25	0,50	0,70
CNMG160608RP	-	5694088	-	16,12	0,8	1,00	3,00	7,00	0,20	0,45	0,60
CNMG160612RP	5413180	5413181	5886542	16,12	1,2	1,20	3,50	7,00	0,22	0,50	0,65
CNMG160616RP	5413182	5413183	-	16,12	1,6	1,40	4,00	8,00	0,25	0,50	0,70
CNMG190612RP	5697939	5694092	5591971	19,34	1,2	1,20	3,50	9,00	0,22	0,50	0,70
CNMG190616RP	-	5694093	-	19,34	1,6	1,40	4,00	9,00	0,25	0,60	0,80
DNMG110408RP	-	5694108	-	11,63	0,8	1,00	2,50	4,00	0,20	0,40	0,50
DNMG110412RP	-	5694109	-	11,63	1,2	1,20	3,00	4,00	0,22	0,40	0,55
DNMG150408RP	5697968	5694121	-	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60
DNMG150412RP	5413195	5413196	-	15,50	1,2	1,20	3,00	5,00	0,22	0,50	0,65
DNMG150608RP	5413197	5413198	-	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60
DNMG150612RP	5413202	5387543	-	15,50	1,2	1,20	3,00	5,00	0,22	0,50	0,65
DNMG150616RP	5387851	5387545	-	15,50	1,6	1,40	3,50	5,00	0,25	0,50	0,70
SNMG120408RP	-	5631151	-	12,70	0,8	1,00	3,00	6,00	0,20	0,45	0,60
SNMG120412RP	5387874	5387563	-	12,70	1,2	1,20	3,50	6,00	0,22	0,50	0,65
SNMG150612RP	5387882	5387567	-	15,88	1,2	1,20	3,50	7,00	0,22	0,55	0,75
SNMG150616RP	5697163	-	-	15,88	1,6	1,40	4,00	7,00	0,25	0,60	0,80
SNMG190612RP	-	5698113	5886544	19,05	1,2	1,20	3,50	9,00	0,22	0,60	0,85
TNMG160408RP	5697030	5698189	-	16,50	0,8	1,00	3,00	6,00	0,20	0,45	0,60
TNMG160412RP	5387896	5387575	-	16,50	1,2	1,20	3,50	6,00	0,22	0,50	0,65
TNMG220408RP	5697178	5698131	5886545	22,00	0,8	1,00	3,00	7,50	0,20	0,45	0,65
TNMG220412RP	-	5698135	-	22,00	1,2	1,20	3,50	7,50	0,22	0,50	0,70
TNMG220416RP	-	5387577	-	22,00	1,6	1,40	4,00	7,50	0,25	0,55	0,75
TNMG220432RP	5387901	5698136	-	22,00	3,2	2,40	7,00	7,50	0,30	0,65	0,90
TNMG330924RP	-	-	5591974	33,00	2,4	2,00	6,00	13,00	0,30	0,65	0,90
WNMG060408RP	5697203	-	-	6,52	0,8	1,00	3,00	4,00	0,20	0,40	0,50
WNMG080408RP	5387915	5413206	5591972	8,69	0,8	1,00	3,00	5,00	0,20	0,45	0,60
WNMG080412RP	5387919	5413207	-	8,69	1,2	1,20	3,50	5,00	0,22	0,50	0,65
WNMG080416RP	-	5413208	-	8,69	1,6	1,40	4,00	5,00	0,25	0,50	0,70



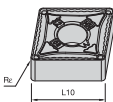
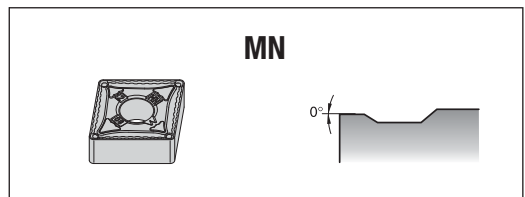
TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

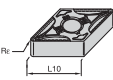
HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

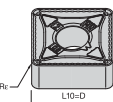
cutting conditions				
cutting speed (m/min) range	P0/P1	140 395 450	135 275 360	130 210 240
	P2	180 265 350	135 195 320	130 150 230
	P3	170 190 250	135 155 230	100 120 170
	P4	90 145 200	70 105 180	50 95 140
carbide grade		KCP10B	KCP25B	KCP40B



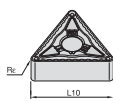
ISO catalogue number	KCP10B	KCP25B	KCP40B	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG090304MN	-	5694080	-	9,67	0,4	0,30	0,80	2,50	0,12	0,20	0,25
CNMG090308MN	5697917	5694081	-	9,67	0,8	0,50	1,30	3,50	0,15	0,35	0,50
CNMG120404MN	5697921	5694082	5591773	12,90	0,4	0,30	0,80	3,50	0,12	0,20	0,25
CNMG120408MN	5388036	5387662	5596457	12,90	0,8	0,50	1,30	4,50	0,15	0,35	0,50
CNMG120412MN	5388061	5387667	5591716	12,90	1,2	0,70	2,00	5,00	0,17	0,40	0,55
CNMG120416MN	5697929	5694085	-	12,90	1,6	0,90	2,50	5,00	0,30	0,50	0,60
CNMG160608MN	5697931	5694086	-	16,12	0,8	0,50	1,30	5,50	0,15	0,35	0,50
CNMG160612MN	5413178	5413179	-	16,12	1,2	0,70	2,00	6,00	0,17	0,40	0,60
CNMG160616MN	5697935	-	-	16,12	1,6	0,90	2,50	6,00	0,30	0,50	0,60
CNMG190608MN	-	5694090	-	19,34	0,8	0,50	1,30	7,50	0,15	0,35	0,50
CNMG190612MN	-	5387688	-	19,34	1,2	0,70	2,00	8,00	0,17	0,40	0,60
CNMG190616MN	5430968	5425547	-	19,34	1,6	0,90	2,50	8,00	0,30	0,50	0,60
CNMG190624MN	-	5696938	-	19,34	2,4	1,20	3,00	9,00	0,60	0,70	0,65



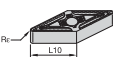
DNMG110404MN	5697962	5694106	-	11,63	0,4	0,30	0,80	2,50	0,12	0,20	0,25
DNMG110408MN	5697965	5694107	-	11,63	0,8	0,50	1,20	3,50	0,15	0,30	0,40
DNMG110412MN	-	5413193	-	11,63	1,2	0,70	1,50	4,00	0,17	0,35	0,50
DNMG150404MN	5430969	5694120	-	15,50	0,4	0,30	0,80	3,50	0,12	0,20	0,25
DNMG150408MN	5388111	5387732	-	15,50	0,8	0,50	1,20	4,50	0,15	0,35	0,50
DNMG150412MN	5431070	5425548	5591721	15,50	1,2	0,70	1,50	5,00	0,17	0,40	0,55
DNMG150604MN	5697970	5694122	-	15,50	0,4	0,30	0,80	3,50	0,12	0,20	0,25
DNMG150608MN	5388117	5387737	-	15,50	0,8	0,50	1,20	4,50	0,15	0,35	0,50
DNMG150612MN	5413200	5387541	5591727	15,50	1,2	0,70	1,50	5,00	0,17	0,40	0,55



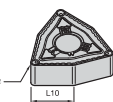
SNMG090308MN	5425582	5425598	-	9,53	0,8	0,50	1,50	3,50	0,15	0,35	0,50
SNMG120404MN	6055505	5698085	-	12,70	0,4	0,30	0,90	3,50	0,12	0,20	0,25
SNMG120408MN	5697161	5698086	5591714	12,70	0,8	0,50	1,50	4,50	0,15	0,35	0,50
SNMG120412MN	5425583	5425599	-	12,70	1,2	0,70	2,00	5,00	0,17	0,40	0,55
SNMG120416MN	-	5698088	-	12,70	1,6	0,90	2,50	5,00	0,30	0,50	0,60
SNMG150612MN	5425586	5425602	-	15,88	1,2	0,70	2,00	6,00	0,17	0,40	0,60
SNMG150616MN	-	5698089	-	15,88	1,6	0,90	2,50	6,00	0,30	0,50	0,65
SNMG190612MN	-	5698111	-	19,05	1,2	0,70	2,00	8,00	0,17	0,50	0,70



TNMG160404MN	5697170	5698125	-	16,50	0,4	0,30	0,90	3,50	0,12	0,20	0,25
TNMG160408MN	5413250	5413277	-	16,50	0,8	0,50	1,50	4,50	0,15	0,35	0,50
TNMG160412MN	5425588	5425604	-	16,50	1,2	0,70	2,00	5,00	0,17	0,40	0,55
TNMG220404MN	-	5698128	-	22,00	0,4	0,30	0,90	4,50	0,12	0,25	0,30
TNMG220408MN	5697176	5698129	-	22,00	0,8	0,50	1,50	6,00	0,15	0,40	0,55
TNMG220412MN	5514452	5698133	5591720	22,00	1,2	0,70	2,00	7,00	0,17	0,40	0,60



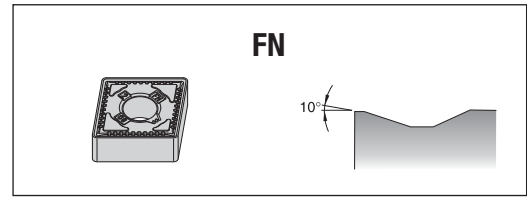
VNMG160404MN	5697186	5696930	-	16,61	0,4	0,30	0,70	2,50	0,12	0,20	0,25
VNMG160408MN	5425591	5425607	-	16,61	0,8	0,50	1,10	3,50	0,15	0,30	0,40
VNMG160412MN	-	5546298	-	16,61	1,2	0,70	1,50	4,00	0,17	0,35	0,45



WNMG060408MN	5697202	5696935	-	6,52	0,8	0,50	1,50	3,50	0,15	0,30	0,40
WNMG080408MN	5413260	5387611	-	8,69	0,8	0,50	1,50	4,50	0,15	0,35	0,50
WNMG080412MN	5425593	5387614	5591718	8,69	1,2	0,70	2,00	5,00	0,17	0,40	0,55
WNMG080416MN	-	5489410	-	8,69	1,6	0,90	2,50	5,00	0,30	0,50	0,60



cutting conditions			
cutting speed (m/min) range	P0/P1	140 395 450	135 275 360
	P2	180 265 350	135 195 320
	P3	170 190 250	135 155 230
	P4	90 145 200	70 105 180
carbide grade		KCP10B	KCP25B



ISO catalogue number	KCP10B	KCP25B	L10	Rε	starting value		starting value		f/rev min	f/rev max
					ap min	depth of cut (mm)	ap max	feed rate (mm/rev)		
CNMG090308FN	5523306	-	9,67	0,8	0,40	1,00	2,00	0,10	0,20	0,30
CNMG120404FN	5531836	5531838	12,90	0,4	0,20	0,50	2,00	0,08	0,15	0,25
CNMG120408FN	5531839	5531890	12,90	0,8	0,40	1,00	2,50	0,10	0,20	0,30
CNMG120412FN	5531894	5531893	12,90	1,2	0,50	1,20	3,00	0,12	0,20	0,30
DNMG110404FN	5531896	5698171	11,63	0,4	0,20	0,50	1,50	0,08	0,15	0,25
DNMG110408FN	5697020	5531897	11,63	0,8	0,40	1,00	2,00	0,10	0,20	0,30
DNMG110412FN	5544755	-	11,63	1,2	0,50	1,20	2,50	0,12	0,20	0,30
DNMG150404FN	5697021	5531899	15,50	0,4	0,20	0,50	2,00	0,08	0,15	0,25
DNMG150408FN	5531900	5698172	15,50	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG150412FN	5697023	-	15,50	1,2	0,50	1,20	3,00	0,12	0,20	0,30
DNMG150604FN	5531901	5531903	15,50	0,4	0,20	0,50	2,00	0,08	0,15	0,25
DNMG150608FN	5388116	5531906	15,50	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG150612FN	5531908	-	15,50	1,2	0,50	1,20	3,00	0,12	0,20	0,30
SNMG120404FN	5531910	-	12,70	0,4	0,20	0,50	2,00	0,08	0,15	0,25
SNMG120408FN	5697027	-	12,70	0,8	0,40	1,00	2,50	0,10	0,20	0,30
TNMG160404FN	5697029	5698187	16,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25
TNMG160408FN	5413249	5698188	16,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
TNMG160412FN	5413251	-	16,50	1,2	0,50	1,20	3,50	0,12	0,20	0,30
TNMG220408FN	5507610	-	22,00	0,8	0,40	1,00	3,50	0,10	0,20	0,30
VNMG160404FN	5697035	5698197	16,61	0,4	0,20	0,40	2,00	0,08	0,15	0,25
VNMG160408FN	5615609	5615650	16,61	0,8	0,30	0,60	2,50	0,10	0,20	0,30
WNMG080404FN	5697036	5698198	8,69	0,4	0,20	0,50	2,00	0,08	0,15	0,25
WNMG080408FN	5697037	5698199	8,69	0,8	0,40	1,00	2,50	0,10	0,20	0,30



TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

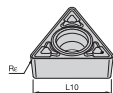
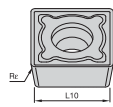
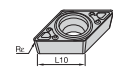
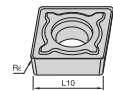
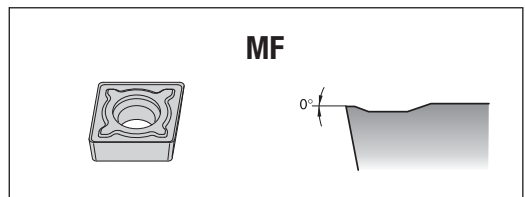
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

cutting conditions			
cutting speed (m/min) range	P0/P1	140 395 450	135 275 360
	P2	180 265 350	135 195 320
	P3	170 190 250	135 155 230
	P4	90 145 200	70 105 180
	P5	150 215 300	120 195 270
	P6	110 180 270	105 150 220
carbide grade		KCP10B	KCP25B



ISO catalogue number	KCP10B	KCP25B	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060204MF	5697910	5694055	6,45	0,4	0,50	1,20	1,80	0,10	0,20	0,25
CCMT09T304MF	5697912	5694058	9,67	0,4	0,50	1,20	2,00	0,12	0,20	0,30
CCMT09T308MF	5388033	5387629	9,67	0,8	0,80	2,00	2,50	0,15	0,25	0,35
CCMT09T312MF	-	5413170	9,67	1,2	1,00	2,50	3,00	0,20	0,30	0,40
CCMT120408MF	5388035	5387661	12,90	0,8	0,80	2,00	3,50	0,15	0,25	0,35
CCMT120412MF	-	5694059	12,90	1,2	1,00	2,50	4,00	0,20	0,30	0,40
DCMT11T304MF	5697956	5694103	11,63	0,4	0,50	1,10	1,80	0,10	0,15	0,20
DCMT11T308MF	5413190	5413191	11,63	0,8	0,80	2,00	2,30	0,12	0,20	0,25
DCMT11T312MF	5388097	5387729	11,63	1,2	1,00	2,00	2,50	0,15	0,25	0,30
SCMT09T308MF	5387858	5387553	9,53	0,8	0,80	2,00	2,50	0,15	0,25	0,35
SCMT09T312MF	-	5387555	9,52	1,2	1,00	2,50	3,00	0,20	0,30	0,40
SCMT120408MF	-	5387557	12,70	0,8	0,80	2,00	3,50	0,15	0,25	0,35
SCMT120412MF	-	5387559	12,70	1,2	1,00	2,50	4,00	0,20	0,30	0,40
TCMT110208MF	-	5698119	11,00	0,8	0,80	2,00	2,00	0,10	0,20	0,30
TCMT16T308MF	-	5698122	16,50	0,8	0,80	2,00	3,00	0,15	0,25	0,30
TCMT16T312MF	-	5698123	16,50	1,2	1,00	2,50	3,50	0,20	0,30	0,35



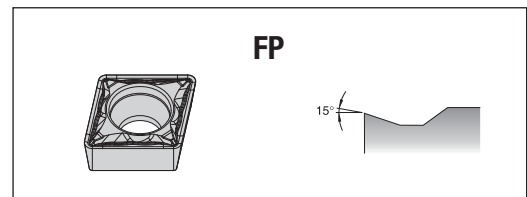
TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

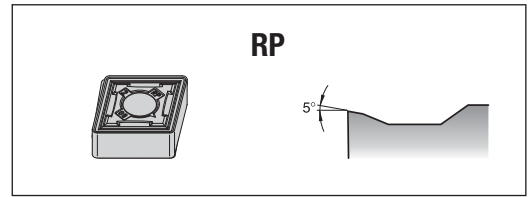
cutting conditions			
cutting speed (m/min) range	P0/P1	140 395 450	135 275 360
	P2	180 265 350	135 195 320
	P3	170 190 250	135 155 230
	P4	90 145 200	70 105 180
	P5	150 215 300	120 195 270
	P6	110 180 270	105 150 220
carbide grade		KCP10B	KCP25B



ISO catalogue number	KCP10B	KCP25B	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060204FP	5537375	5537376	6,45	0,4	0,20	0,50	1,60	0,06	0,15	0,20
CCMT060208FP	-	5537378	6,45	0,8	0,40	0,90	2,00	0,10	0,20	0,25
CCMT09T302FP	-	5537379	9,67	0,2	0,16	0,40	1,00	0,06	0,10	0,12
CCMT09T304FP	5537420	5537421	9,67	0,4	0,20	0,50	1,60	0,06	0,15	0,20
CCMT09T308FP	5537422	5537423	9,67	0,8	0,40	0,90	2,00	0,10	0,20	0,25
CCMT120404FP	5537425	5537426	12,90	0,4	0,20	0,50	2,00	0,06	0,15	0,25
CCMT120408FP	-	5537427	12,90	0,8	0,40	0,90	3,00	0,10	0,20	0,30
DCMT070202FP	-	5537436	7,75	0,2	0,16	0,40	1,00	0,06	0,10	0,12
DCMT070208FP	-	5537437	7,75	0,8	0,40	0,90	2,00	0,10	0,20	0,25
DCMT11T302FP	5537439	5537438	11,63	0,2	0,16	0,40	1,00	0,06	0,10	0,12
DCMT11T304FP	5537442	5537443	11,63	0,4	0,20	0,50	1,60	0,06	0,15	0,20
DCMT11T308FP	5538858	-	11,63	0,8	0,40	0,90	2,00	0,10	0,20	0,25
SCMT09T308FP	-	5387551	9,53	0,8	0,40	1,00	2,00	0,10	0,20	0,25
SCMT120408FP	-	5387556	12,70	0,8	0,40	1,00	3,00	0,10	0,20	0,30
TCMT090204FP	-	5538891	9,63	0,4	0,20	0,50	1,60	0,06	0,10	0,15
TCMT110304FP	5538894	-	11,00	0,4	0,20	0,50	2,00	0,06	0,15	0,20
VBMT160404FP	5387907	5387584	16,61	0,4	0,20	0,40	2,00	0,06	0,15	0,20
VBMT160408FP	5538903	5538904	16,61	0,8	0,40	0,80	2,50	0,10	0,20	0,30
VBMT160412FP	5387910	5387588	16,61	1,2	0,60	1,20	2,50	0,10	0,20	0,30



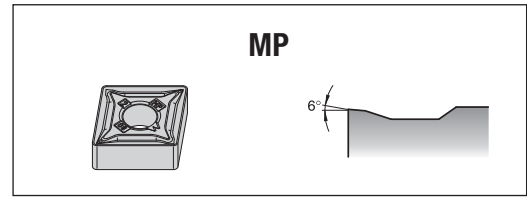
cutting conditions			
cutting speed (m/min) range	M1	100 180 250	90 150 180
	M2	100 165 260	90 140 180
	M3	100 150 250	90 120 180
carbide grade		KCM15B	KCM25B



ISO catalogue number	KCM15B	KCM25B	L10	R _ε	starting value		starting value		f/rev min	starting value feed rate (mm/rev)	f/rev max
					ap min	depth of cut (mm)	ap max	f/rev max			
CNMG120404RP	-	5591950	12,90	0,4	0,60	2,00	3,50	0,18	0,30	0,40	
CNMG120408RP	5640482	5596468	12,90	0,8	1,00	3,00	4,50	0,20	0,45	0,60	
CNMG120412RP	5640483	5596469	12,90	1,2	1,20	3,50	5,00	0,22	0,50	0,65	
CNMG120416RP	-	5591957	12,90	1,6	1,40	4,00	5,00	0,25	0,50	0,70	
CNMG160612RP	5640986	5591919	16,12	1,2	1,20	3,50	7,00	0,22	0,50	0,65	
CNMG160616RP	-	5591960	16,12	1,6	1,40	4,00	8,00	0,25	0,50	0,70	
CNMG190612RP	-	5591931	19,34	1,2	1,20	3,50	9,00	0,22	0,50	0,70	
CNMG190616RP	-	5591955	19,34	1,6	1,40	4,00	9,00	0,25	0,60	0,80	
DNMG150408RP	-	5591976	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60	
DNMG150608RP	-	5591932	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60	
SNMG120412RP	-	5591982	12,70	1,2	1,20	3,50	6,00	0,22	0,50	0,65	
SNMG150616RP	5641107	5591953	15,88	1,6	1,40	4,00	7,00	0,25	0,60	0,80	
SNMG190612RP	-	5591935	19,05	1,2	1,20	3,50	9,00	0,22	0,60	0,85	
SNMG190616RP	-	5591936	19,05	1,6	1,40	4,00	9,00	0,25	0,65	0,90	
TNMG220408RP	-	5591962	22,00	0,8	1,00	3,00	7,50	0,20	0,45	0,65	
TNMG220412RP	-	5591964	22,00	1,2	1,20	3,50	7,50	0,22	0,50	0,70	
TNMG270612RP	-	5591967	27,50	1,2	1,20	3,50	9,00	0,22	0,50	0,70	
WNMG080408RP	5641122	5591959	8,69	0,8	1,00	3,00	5,00	0,20	0,45	0,60	
WNMG080412RP	-	5591938	8,69	1,2	1,20	3,50	5,00	0,22	0,50	0,65	



cutting conditions				
cutting speed (m/min) range	M1	130 215 240	100 180 250	90 150 180
	M2	130 200 240	100 165 260	90 140 180
	M3	130 185 240	100 150 250	90 120 180
carbide grade		KCU10	KCM15B	KCM25B



ISO catalogue number	KCU10	KCM15B	KCM25B	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG090308MP	-	5640969	-	9,67	0,8	0,80	2,00	3,50	0,15	0,35	0,50
CNMG120404MP	4050679	5640971	5591779	12,90	0,4	0,60	1,50	3,50	0,12	0,20	0,25
CNMG120408MP	4050686	5640480	5596460	12,90	0,8	0,80	2,00	4,50	0,15	0,35	0,50
CNMG120412MP	4050692	5640979	5591901	12,90	1,2	1,00	2,50	5,00	0,17	0,35	0,55
CNMG120416MP	-	5640981	-	12,90	1,6	1,20	3,00	5,00	0,20	0,40	0,60
CNMG160608MP	4050700	5640982	-	16,12	0,8	0,80	2,00	5,50	0,15	0,35	0,55
CNMG160612MP	4050702	5640985	5591780	16,12	1,2	1,00	2,50	6,00	0,17	0,40	0,60
CNMG160616MP	-	-	5591775	16,12	1,6	1,20	3,00	6,00	0,20	0,40	0,60
CNMG190608MP	-	5640988	5591787	19,34	0,8	0,80	2,00	7,50	0,15	0,35	0,55
CNMG190612MP	-	-	5591799	19,34	1,2	1,00	2,50	8,00	0,17	0,40	0,60
DNMG110408MP	-	-	5591791	11,63	0,8	0,60	1,50	2,50	0,12	0,20	0,25
DNMG110412MP	-	-	5591930	11,63	1,2	0,80	2,00	3,50	0,15	0,35	0,50
DNMG150404MP	4053379	5641098	5591902	15,50	0,4	0,60	1,50	3,50	0,12	0,20	0,25
DNMG150408MP	4053384	5641099	5591782	15,50	0,8	0,80	2,00	4,50	0,15	0,35	0,50
DNMG150412MP	4053390	-	-	15,50	1,2	1,00	2,50	5,00	0,17	0,35	0,55
DNMG150604MP	4053396	5641101	5591788	15,50	0,4	0,60	1,50	3,50	0,12	0,20	0,25
DNMG150608MP	4053400	5641102	5591900	15,50	0,8	0,80	2,00	4,50	0,15	0,35	0,50
DNMG150612MP	-	-	5591795	15,50	1,2	1,00	2,50	5,00	0,17	0,35	0,55
SNMG120408MP	5062106	5641105	5591907	12,70	0,8	0,60	2,00	3,50	0,12	0,20	0,25
SNMG120412MP	-	-	5591933	12,70	1,2	0,80	2,50	4,50	0,15	0,35	0,50
SNMG120416MP	-	-	5591952	12,70	1,6	1,00	3,00	5,00	0,17	0,35	0,55
SNMG150608MP	-	-	5591939	15,88	0,8	0,60	2,00	5,00	0,12	0,20	0,30
SNMG190612MP	-	-	5591934	19,05	1,2	0,80	2,50	7,00	0,15	0,35	0,55
SNMG190616MP	-	-	5591951	19,05	1,6	1,00	3,00	7,50	0,17	0,45	0,70
TNMG160404MP	5062131	5641110	5591785	16,50	0,4	0,60	2,00	3,50	0,12	0,20	0,25
TNMG160408MP	5062135	5640490	5596461	16,50	0,8	0,80	2,50	4,50	0,15	0,35	0,50
TNMG160412MP	-	5641111	5591956	16,50	1,2	1,00	3,00	5,00	0,17	0,35	0,55
TNMG220408MP	5062140	5641113	5591910	22,00	0,8	0,80	2,50	4,50	0,15	0,35	0,50
TNMG220412MP	-	-	5591796	22,00	1,2	1,00	3,00	6,00	0,17	0,35	0,55
VNMG160404MP	4045150	5641115	5591789	16,61	0,4	0,60	1,50	3,00	0,12	0,20	0,25
VNMG160408MP	4045164	5641116	5591781	16,61	0,8	0,80	2,00	3,50	0,15	0,30	0,40
VNMG160412MP	-	5641117	-	16,61	1,2	1,00	2,00	4,00	0,17	0,30	0,40
WNMG060404MP	-	-	5591937	6,52	0,4	0,60	2,00	3,50	0,12	0,20	0,25
WNMG060408MP	4045177	-	5591912	6,52	0,8	0,80	2,50	3,50	0,15	0,30	0,45
WNMG080408MP	4045182	5641120	5591774	8,69	0,8	0,80	2,50	4,50	0,15	0,35	0,50
WNMG080412MP	-	-	5591790	8,69	1,2	1,00	3,00	5,00	0,17	0,35	0,55



TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

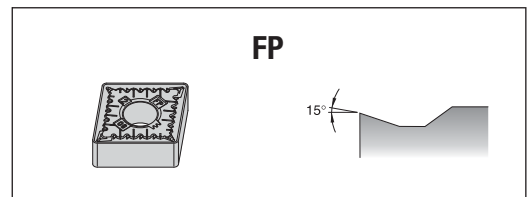
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

cutting conditions			
cutting speed (m/min) range	M1	130 215 240	100 180 260
	M2	130 200 240	100 165 260
	M3	130 185 240	100 150 260
carbide grade		KCU10	KCM15B



ISO catalogue number	KCU10	KCM15B	L10	R _ε	starting value		starting value		f/rev min	starting value feed rate (mm/rev)	f/rev max
					ap min	depth of cut (mm)	ap max	feed rate (mm/rev)			
CNMG120404FP	4171824	-	12,90	0,4	0,20	0,50	2,00	0,08	0,15	0,25	
CNMG120408FP	4050061	5640449	12,90	0,8	0,40	1,00	2,50	0,10	0,20	0,30	
CNMG120412FP	4050062	-	12,90	1,2	0,50	1,20	2,50	0,12	0,25	0,35	
DNMG110404FP	4171826	5640486	11,63	0,4	0,20	0,50	2,00	0,08	0,15	0,25	
DNMG110408FP	4050743	-	11,63	0,8	0,40	1,00	2,50	0,10	0,20	0,30	
DNMG150404FP	4171827	-	15,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25	
DNMG150408FP	4171828	-	15,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30	
DNMG150412FP	4171829	-	15,50	1,2	0,50	1,20	3,50	0,12	0,25	0,35	
DNMG150604FP	4171830	-	15,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25	
DNMG150608FP	4171831	-	15,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30	
DNMG150612FP	-	5640487	15,50	1,2	0,50	1,20	3,50	0,12	0,25	0,35	
SNMG120404FP	4171835	-	12,70	0,4	0,20	0,50	2,00	0,08	0,15	0,25	
SNMG120408FP	4171836	-	12,70	0,8	0,40	1,00	2,50	0,10	0,20	0,30	
TNMG160404FP	4171838	-	16,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25	
TNMG160408FP	4171839	-	16,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30	
TNMG160412FP	4171840	-	16,50	1,2	0,50	1,20	3,50	0,12	0,25	0,35	
TNMG220404FP	4171841	-	22,00	0,4	0,20	0,50	3,00	0,08	0,15	0,25	
TNMG220408FP	4171842	-	22,00	0,8	0,40	1,00	5,00	0,10	0,20	0,30	
VNMG160404FP	4171843	-	16,61	0,4	0,20	0,40	2,00	0,08	0,15	0,25	
VNMG160408FP	4171844	-	16,61	0,8	0,30	0,60	2,50	0,10	0,20	0,30	
WNMG060404FP	4050746	-	6,52	0,4	0,20	0,50	2,00	0,08	0,15	0,25	
WNMG080404FP	4171849	-	8,69	0,4	0,20	0,50	2,00	0,08	0,15	0,25	
WNMG080408FP	4171851	5640494	8,69	0,8	0,40	1,00	2,50	0,10	0,20	0,30	



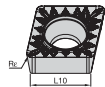
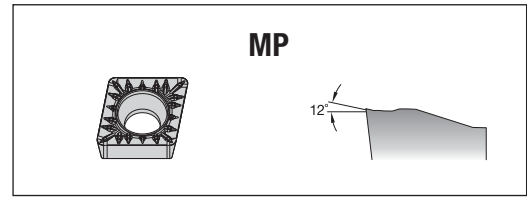
TURNING

MILLING

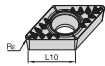
HOLEMAKING

TOOLING SYSTEMS

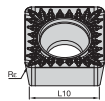
cutting conditions			
cutting speed (m/min) range	M1	100 180 250	90 150 180
	M2	100 165 260	90 140 180
	M3	100 150 250	90 120 180
carbide grade		KCM15B	KCM25B



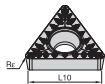
ISO catalogue number	KCM15B	KCM25B	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060204MP	5640906	5591914	6,45	0,4	0,40	1,00	2,00	0,12	0,15	0,20
CCMT09T304MP	5640960	5591792	9,67	0,4	0,40	1,00	2,30	0,12	0,20	0,25
CCMT09T308MP	5640964	5591783	9,67	0,8	0,60	1,50	3,00	0,15	0,25	0,30
CCMT120408MP	-	5591777	12,90	0,8	0,60	1,50	4,00	0,15	0,25	0,35
CCMT120412MP	-	5591793	12,90	1,2	0,80	2,00	4,00	0,17	0,30	0,40



DCMT11T308MP	-	5591784	11,63	0,8	0,60	1,50	2,30	0,12	0,20	0,25
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SCMT09T308MP	-	5591776	9,53	0,8	0,60	2,00	3,00	0,15	0,25	0,30
SCMT120408MP	-	5591794	12,70	0,8	0,60	2,00	3,50	0,15	0,25	0,35



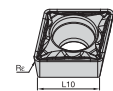
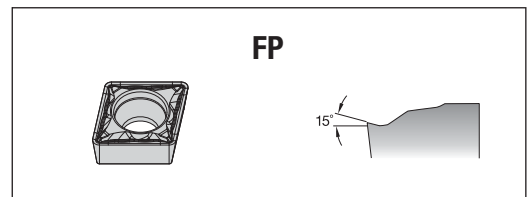
TCMT16T304MP	-	5591904	16,50	0,4	0,40	1,00	3,00	0,12	0,20	0,25
TCMT16T308MP	-	5591906	16,50	0,8	0,60	1,50	3,50	0,15	0,25	0,35



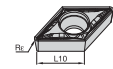
VBMT160404MP	-	5591786	16,61	0,4	0,20	0,50	1,50	0,10	0,15	0,20
VBMT160408MP	-	5591778	16,61	0,8	0,40	0,90	1,50	0,15	0,20	0,25



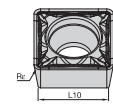
cutting conditions				
cutting speed (m/min) range	M1	130	215	240
	M2	130	200	240
	M3	130	185	240
carbide grade		KCU10		



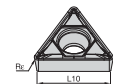
ISO catalogue number	KCU10	L10	Re	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060202FP	3769290	6,45	0,2	0,16	0,40	1,00	0,06	0,10	0,12
CCMT060204FP	3769291	6,45	0,4	0,20	0,50	1,60	0,06	0,15	0,20
CCMT060208FP	3769292	6,45	0,8	0,40	0,90	2,00	0,10	0,20	0,25
CCMT09T302FP	3769343	9,67	0,2	0,16	0,40	1,00	0,06	0,10	0,12
CCMT09T304FP	3769344	9,67	0,4	0,20	0,50	1,60	0,06	0,15	0,20
CCMT09T308FP	3482532	9,67	0,8	0,40	0,90	2,00	0,10	0,20	0,25
CCMT120404FP	3769345	12,90	0,4	0,20	0,50	2,00	0,06	0,15	0,25
CCMT120408FP	3769346	12,90	0,8	0,40	0,90	3,00	0,10	0,20	0,30



DCMT070202FP	3769355	7,75	0,2	0,16	0,40	1,00	0,06	0,10	0,12
DCMT070204FP	3769356	7,75	0,4	0,20	0,50	1,60	0,06	0,15	0,20
DCMT070208FP	3769357	7,75	0,8	0,40	0,90	2,00	0,10	0,20	0,25
DCMT11T302FP	3769358	11,63	0,2	0,16	0,40	1,00	0,06	0,10	0,12
DCMT11T304FP	3769359	11,63	0,4	0,20	0,50	1,60	0,06	0,15	0,20
DCMT11T308FP	3769360	11,63	0,8	0,40	0,90	2,00	0,10	0,20	0,25



SCMT09T304FP	3769370	9,53	0,4	0,20	0,50	1,60	0,06	0,15	0,20
SCMT09T308FP	3769371	9,53	0,8	0,40	1,00	2,00	0,10	0,20	0,25
SCMT120404FP	3769372	12,70	0,4	0,20	0,50	2,00	0,06	0,15	0,25
SCMT120408FP	3769373	12,70	0,8	0,40	1,00	3,00	0,10	0,20	0,30



TCMT090204FP	3769377	9,63	0,4	0,20	0,50	1,60	0,06	0,10	0,15
TCMT090208FP	3769378	9,63	0,8	0,40	1,00	2,00	0,10	0,15	0,20
TCMT110204FP	3769380	11,00	0,4	0,20	0,50	2,00	0,06	0,15	0,20
TCMT110208FP	3769381	11,00	0,8	0,40	1,00	3,00	0,10	0,20	0,25
TCMT110304FP	3769382	11,00	0,4	0,20	0,50	2,00	0,06	0,15	0,20
TCMT110308FP	3769383	11,00	0,8	0,40	1,00	3,00	0,10	0,20	0,25
TCMT110312FP	3769384	11,00	1,2	0,60	1,50	3,00	0,10	0,20	0,25
TCMT16T304FP	3769386	16,50	0,4	0,20	0,50	2,00	0,06	0,15	0,25
TCMT16T308FP	3769387	16,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
TCMT16T312FP	3769388	16,50	1,2	0,60	1,50	3,00	0,10	0,20	0,30

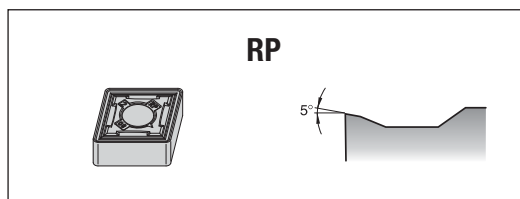


VBMT110302FP	3769401	11,07	0,2	0,16	0,40	1,00	0,06	0,10	0,12
VBMT110304FP	3769402	11,07	0,4	0,20	0,40	1,60	0,06	0,15	0,20
VBMT110308FP	3769403	11,07	0,8	0,40	0,80	2,00	0,10	0,20	0,25
VBMT160402FP	3769404	16,61	0,2	0,16	0,40	1,50	0,06	0,10	0,12
VBMT160404FP	3769405	16,61	0,4	0,20	0,40	2,00	0,06	0,15	0,20
VBMT160408FP	3769406	16,61	0,8	0,40	0,80	2,50	0,10	0,20	0,30





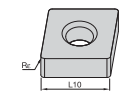
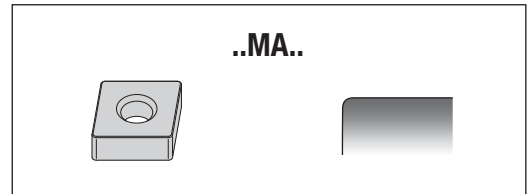
cutting conditions			
cutting speed (m/min) range	K1	280 450 600	240 360 550
	K2	230 360 550	150 270 450
	K3	150 240 500	140 215 410
carbide grade		KCK05	KCK15



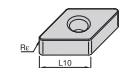
ISO catalogue number	KCK05	KCK15	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG120408RP	3751862	3752176	12,90	0,8	1,00	3,00	4,50	0,20	0,45	0,60
CNMG120412RP	3752114	3752050	12,90	1,2	1,20	3,50	5,00	0,22	0,50	0,65
CNMG160612RP	-	3752052	16,12	1,2	1,20	3,50	7,00	0,22	0,50	0,65
CNMG190612RP	-	3752053	19,34	1,2	1,20	3,50	9,00	0,22	0,50	0,70
DNMG150612RP	-	3752057	15,50	1,2	1,20	3,00	5,00	0,22	0,50	0,65
SNMG120412RP	-	3752061	12,70	1,2	1,20	3,50	6,00	0,22	0,50	0,65
TNMG160408RP	3752122	-	16,50	0,8	1,00	3,00	6,00	0,20	0,45	0,60
TNMG220412RP	-	3752065	22,00	1,2	1,20	3,50	7,50	0,22	0,50	0,70
VNMG160408RP	-	3752067	16,61	0,8	1,00	2,00	3,50	0,20	0,40	0,50
WNMG080408RP	3752124	-	8,69	0,8	1,00	3,00	5,00	0,20	0,45	0,60
WNMG080412RP	3752125	3752070	8,69	1,2	1,20	3,50	5,00	0,22	0,50	0,65



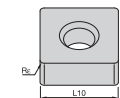
cutting conditions				
cutting speed (m/min) range	K1	240	360	550
	K2	150	270	450
	K3	140	215	410
carbide grade		KCK15		



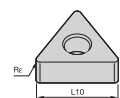
ISO catalogue number	KCK15	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMA120408	3752128	12,90	0,8	1,00	3,00	6,00	0,30	0,45	0,60
CNMA120412	3752129	12,90	1,2	1,50	4,50	6,00	0,35	0,50	0,65
CNMA120416	3752130	12,90	1,6	1,40	4,00	6,00	0,35	0,55	0,70
CNMA160608	3752131	16,12	0,8	1,00	3,00	7,00	0,30	0,45	0,60
CNMA160612	3752132	16,12	1,2	1,20	3,50	7,00	0,32	0,50	0,65
CNMA160616	3752143	16,12	1,6	1,40	4,00	8,00	0,35	0,55	0,70
CNMA190612	3752144	19,34	1,2	1,20	3,50	9,00	0,32	0,50	0,70



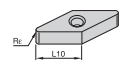
DNMA150408	3752145	15,50	0,8	1,00	3,00	6,00	0,32	0,45	0,60
DNMA150412	3752146	15,50	1,2	1,20	3,50	6,00	0,35	0,50	0,65
DNMA150608	3752147	15,50	0,8	1,00	3,00	6,00	0,32	0,45	0,60



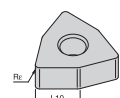
SNMA120412	3752152	12,70	1,2	1,20	3,50	6,00	0,32	0,50	0,65
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TNMA160408	3752157	16,50	0,8	1,00	2,50	6,00	0,30	0,45	0,60
TNMA160412	3752158	16,50	1,2	1,20	3,00	6,00	0,32	0,50	0,65
TNMA160416	3752159	16,50	1,6	1,80	4,50	6,00	0,32	0,50	0,65



VNMA160408	3752164	16,61	0,8	0,60	1,50	4,00	0,25	0,40	0,50
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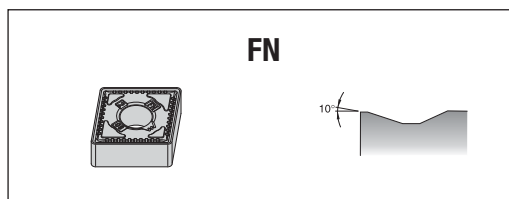


WNMA060408	3752165	6,52	0,8	1,00	2,50	4,00	0,30	0,40	0,50
WNMA080408	3752167	8,69	0,8	1,00	2,50	5,00	0,30	0,45	0,60
WNMA080412	3752168	8,69	1,2	1,20	3,00	5,00	0,32	0,50	0,65





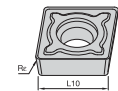
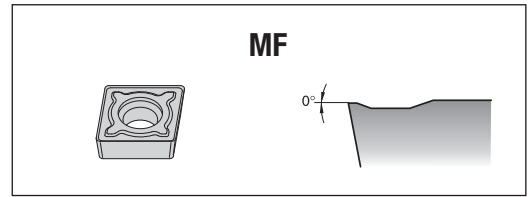
cutting conditions				
cutting speed (m/min) range	K1	280	450	600
	K2	230	240	550
	K3	150	240	500
carbide grade		KCK05		



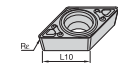
ISO catalogue number	KCK05	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG090308FN	3751944	9,67	0,8	0,40	1,00	2,00	0,10	0,20	0,30
CNMG120404FN	3751945	12,90	0,4	0,20	0,50	2,00	0,08	0,15	0,25
CNMG120408FN	3751946	12,90	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG110404FN	3751950	11,63	0,4	0,20	0,50	1,50	0,08	0,15	0,25
DNMG110408FN	3751952	11,63	0,8	0,40	1,00	2,00	0,10	0,20	0,30
DNMG150404FN	3751955	15,50	0,4	0,20	0,50	2,00	0,08	0,15	0,25
DNMG150408FN	3751956	15,50	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG150412FN	3751958	15,50	1,2	0,50	1,20	3,00	0,12	0,20	0,30
DNMG150604FN	3751959	15,50	0,4	0,20	0,50	2,00	0,08	0,15	0,25
DNMG150608FN	3751960	15,50	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG150612FN	3751961	15,50	1,2	0,50	1,20	3,00	0,12	0,20	0,30
SNMG090308FN	3751963	9,53	0,8	0,40	1,00	2,00	0,10	0,20	0,30
SNMG120404FN	3751964	12,70	0,4	0,20	0,50	2,00	0,08	0,15	0,25
TNMG160404FN	3751970	16,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25
TNMG160408FN	3751971	16,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
TNMG160412FN	3751972	16,50	1,2	0,50	1,20	3,50	0,12	0,20	0,30
VNMG160404FN	3751974	16,61	0,4	0,20	0,40	2,00	0,08	0,15	0,25
VNMG160408FN	3751975	16,61	0,8	0,30	0,60	2,50	0,10	0,20	0,30
WNMG060404FN	3751976	6,52	0,4	0,20	0,50	1,50	0,08	0,15	0,25
WNMG080404FN	3751978	8,69	0,4	0,20	0,50	2,00	0,08	0,15	0,25
WNMG080408FN	3751979	8,69	0,8	0,40	1,00	2,50	0,10	0,20	0,30



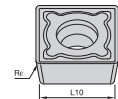
cutting conditions				
cutting speed (m/min) range	K1	230	300	550
	K2	150	240	420
	K3	150	210	350
carbide grade		KCK20		



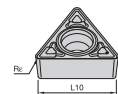
ISO catalogue number	KCK20	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060204MF	3755531	6,45	0,4	0,50	1,20	1,80	0,10	0,20	0,25
CCMT09T304MF	3755532	9,67	0,4	0,50	1,20	2,00	0,12	0,20	0,30
CCMT09T308MF	3758173	9,67	0,8	0,80	2,00	2,50	0,15	0,25	0,35
CCMT09T312MF	3755533	9,67	1,2	1,00	2,50	3,00	0,20	0,30	0,40
CCMT120408MF	3758174	12,90	0,8	0,80	2,00	3,50	0,15	0,25	0,35
CCMT120412MF	3755534	12,90	1,2	1,00	2,50	4,00	0,20	0,30	0,40



DCMT11T304MF	3755538	11,63	0,4	0,50	1,10	1,80	0,10	0,15	0,20
DCMT11T308MF	3755539	11,63	0,8	0,80	2,00	2,30	0,12	0,20	0,25
DCMT11T312MF	3755540	11,63	1,2	1,00	2,00	2,50	0,15	0,25	0,30



SCMT09T308MF	3755542	9,53	0,8	0,80	2,00	2,50	0,15	0,25	0,35
SCMT120408MF	3755543	12,70	0,8	0,80	2,00	3,50	0,15	0,25	0,35
SCMT120412MF	3755544	12,70	1,2	1,00	2,50	4,00	0,20	0,30	0,40

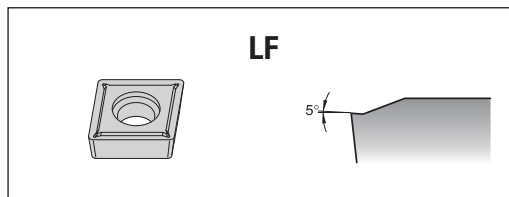


TCMT110208MF	3755547	11,00	0,8	0,80	2,00	2,00	0,10	0,20	0,30
TCMT16T308MF	3755548	16,50	0,8	0,80	2,00	3,00	0,15	0,25	0,30
TCMT16T312MF	3755549	16,50	1,2	1,00	2,50	3,50	0,20	0,30	0,35





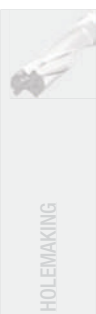
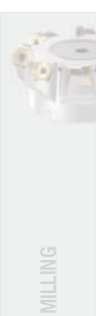
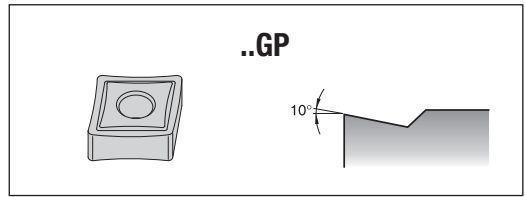
cutting conditions				
cutting speed (m/min) range	K1	230	300	550
	K2	150	240	420
	K3	150	210	350
carbide grade		KCK20		



ISO catalogue number	KCK20	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCMT060204LF	3758167	6,45	0,4	0,40	0,80	2,00	0,08	0,15	0,20
CCMT09T304LF	3758168	9,67	0,4	0,40	0,80	2,00	0,08	0,20	0,30
CCMT09T308LF	3758169	9,67	0,8	0,80	1,50	2,30	0,10	0,20	0,30
CCMT120404LF	3758170	12,90	0,4	0,40	0,80	2,50	0,08	0,20	0,30
CCMT120408LF	3755481	12,90	0,8	0,80	1,50	3,00	0,10	0,25	0,40
DCMT070204LF	3755486	7,75	0,4	0,40	0,90	2,00	0,08	0,15	0,20
DCMT11T304LF	3758172	11,63	0,4	0,40	0,90	2,00	0,08	0,20	0,30
DCMT11T308LF	3755487	11,63	0,8	0,80	2,00	2,30	0,10	0,20	0,30
SCMT09T304LF	3755504	9,53	0,4	0,40	1,00	2,00	0,08	0,20	0,30
SCMT09T308LF	3755505	9,53	0,8	0,80	2,00	2,30	0,10	0,20	0,30
SCMT120408LF	3755507	12,70	0,8	0,80	2,00	3,00	0,10	0,25	0,40
SCMT120412LF	3755508	12,70	1,2	1,00	2,50	3,00	0,10	0,25	0,40
TCMT110204LF	3755511	11,00	0,4	0,40	1,00	2,00	0,08	0,20	0,30
TCMT16T308LF	3755514	16,50	0,8	0,80	2,00	2,30	0,10	0,25	0,35
TCMT16T312LF	3755515	16,50	1,2	1,20	3,00	2,30	0,10	0,25	0,40
VBMT160408LF	3755526	16,61	0,8	0,60	1,20	2,00	0,08	0,15	0,25
VBMT160412LF	3755527	16,61	1,2	0,80	1,50	2,30	0,10	0,20	0,30



cutting conditions				
cutting speed (m/min) range	N1-N2	125	550	1000
	N4	125	275	750
	N5	125	170	1200
	N6	100	200	500
	N8	100	215	500
carbide grade		KC5410		

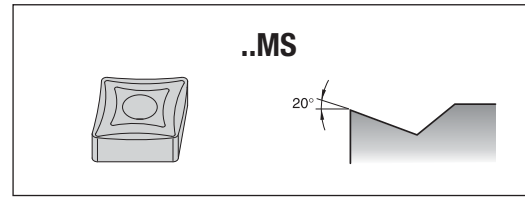


ISO catalogue number	KC5410	L10	Rε	starting value			starting value		
				ap min	depth of cut (mm)	ap max	f/rev min	feed rate (mm/rev)	f/rev max
CNGP120401	1785715	12,90	0,1	0,10	0,30	1,00	0,05	0,10	0,12
CNGP120402	1785716	12,90	0,2	0,20	0,50	1,80	0,10	0,15	0,20
CNGP120404	1785717	12,90	0,4	0,30	0,80	2,80	0,28	0,35	0,45
CNGP120408	1785718	12,90	0,8	0,50	1,20	3,20	0,30	0,40	0,50
CNGP120412	1785719	12,90	1,2	0,80	2,00	3,50	0,30	0,45	0,55
DNGP150402	1560717	15,50	0,2	0,20	0,50	1,80	0,10	0,15	0,20
DNGP150404	1785733	15,50	0,4	0,30	0,80	2,80	0,28	0,35	0,45
DNGP150408	1785734	15,50	0,8	0,50	1,20	3,20	0,30	0,40	0,50
DNGP150604	1785735	15,50	0,4	0,30	0,80	2,80	0,28	0,35	0,45
TNGP160404	1785740	16,50	0,4	0,30	0,80	2,80	0,28	0,35	0,45
TNGP160408	1785741	16,50	0,8	0,50	1,20	3,20	0,30	0,40	0,50
VNGP160401	1785746	16,61	0,1	0,10	0,30	1,00	0,05	0,10	0,10
VNGP160402	1785747	16,61	0,2	0,20	0,50	1,80	0,10	0,15	0,20





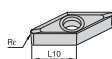
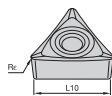
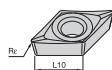
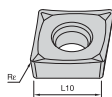
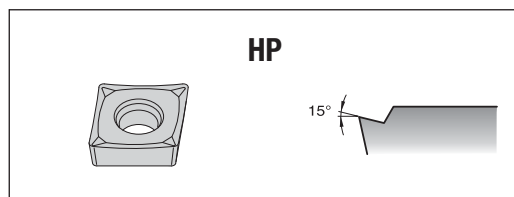
cutting conditions				
cutting speed (m/min) range	N1-N2	125	550	1000
	N4	125	275	750
	N5	125	170	1200
	N6	100	200	500
	N8	100	215	500
carbide grade		KC5410		



ISO catalogue number	KC5410	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMS120408	1560797	12,90	0,8	0,60	1,50	2,30	0,15	0,30	0,40
CNMS160608	1560799	16,12	0,8	0,60	1,50	3,00	0,15	0,30	0,40
CNMS190608	1560801	19,34	0,8	0,60	1,50	5,00	0,15	0,30	0,45
DNMS150408	1560803	15,50	0,8	0,60	1,50	2,30	0,15	0,30	0,40
SNMS190612	1560808	19,05	1,2	1,00	2,50	5,00	0,15	0,30	0,45
TNMS220408	1560829	22,00	0,8	0,60	1,50	5,00	0,15	0,30	0,45
VNMS160404	1560833	16,61	0,4	0,20	0,50	2,00	0,13	0,25	0,35
VNMS160408	1560834	16,61	0,8	0,60	1,50	2,30	0,15	0,30	0,40



cutting conditions				
cutting speed (m/min) range	N1-N2	125	550	1000
	N4	125	275	750
	N5	125	170	1200
	N6	100	200	500
	N8	100	215	500
carbide grade		KC5410		

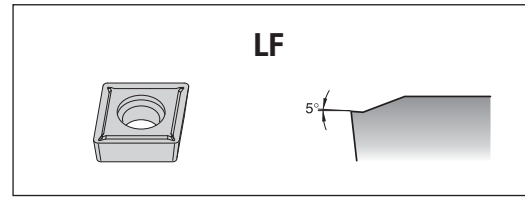


ISO catalogue number	KC5410	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCGT060202HP	1560600	6,45	0,2	0,20	0,40	1,00	0,05	0,10	0,15
CCGT060204HP	1560389	6,45	0,4	0,40	0,80	1,80	0,08	0,15	0,30
CCGT060208HP	1623193	6,45	0,8	0,60	1,10	2,00	0,10	0,25	0,40
CCGT09T302HP	1560390	9,67	0,2	0,20	0,40	1,50	0,05	0,10	0,15
CCGT09T304HP	1560651	9,67	0,4	0,40	0,80	2,00	0,08	0,15	0,30
CCGT09T308HP	1623194	9,67	0,8	0,60	1,10	2,30	0,10	0,25	0,40
CCGT120404HP	1560653	12,90	0,4	0,40	0,80	3,50	0,08	0,15	0,30
CCGT120408HP	1560655	12,90	0,8	0,60	1,10	4,00	0,10	0,25	0,40
DCGT070202HP	1623200	7,75	0,2	0,20	0,40	1,00	0,05	0,10	0,15
DCGT070204HP	1623271	7,75	0,4	0,40	0,80	1,80	0,08	0,15	0,30
DCGT070208HP	1785753	7,75	0,8	0,60	1,10	2,00	0,10	0,25	0,40
DCGT11T302HP	1560699	11,63	0,2	0,20	0,40	1,50	0,05	0,10	0,15
DCGT11T304HP	1560714	11,63	0,4	0,40	0,80	2,00	0,08	0,15	0,30
DCGT11T308HP	1560715	11,63	0,8	0,60	1,10	2,30	0,10	0,25	0,40
TCGT110202HP	1623272	11,00	0,2	0,20	0,40	1,00	0,05	0,10	0,15
TCGT110204HP	1623273	11,00	0,4	0,40	0,70	1,80	0,08	0,15	0,30
TCGT16T304HP	1623274	16,50	0,4	0,40	0,70	3,50	0,08	0,15	0,30
TCGT16T308HP	1623275	16,50	0,8	0,60	1,00	4,00	0,10	0,25	0,40
VBGT110302HP	1910043	11,07	0,2	0,20	0,40	1,00	0,05	0,10	0,15
VBGT110304HP	1910044	11,07	0,4	0,40	0,70	1,80	0,08	0,15	0,30
VBGT160404HP	1623278	16,61	0,4	0,40	0,70	3,50	0,08	0,15	0,30
VBGT160408HP	1623279	16,61	0,8	0,60	1,00	4,00	0,10	0,25	0,40

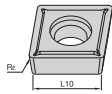


TURNING
FIRST CHOICE

cutting conditions				
cutting speed (m/min) range	N1-N2	125	550	1000
	N4	125	275	750
	N5	125	170	1200
	N6	100	200	500
	N8	100	215	500
carbide grade		KC5410		

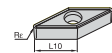


MILLING
FIRST CHOICE



ISO catalogue number	KC5410	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCGT09T304LF	1807220	9,67	0,4	0,30	0,60	2,00	0,08	0,20	0,30



HOLEMAKING
FIRST CHOICE

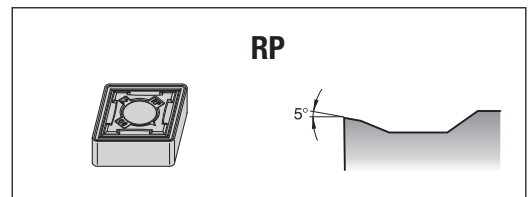


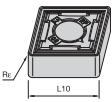
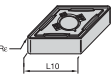
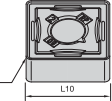
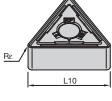
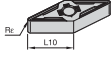
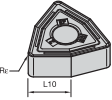
VBGT110301LF	1866757	11,07	0,1	0,05	0,15	1,00	0,04	0,05	0,08
VBGT160402LF	1866761	16,61	0,2	0,10	0,20	1,50	0,06	0,10	0,12
VBGT160404LF	1866762	16,61	0,4	0,30	0,60	2,00	0,08	0,15	0,20

TOOLING SYSTEMS
FIRST CHOICE



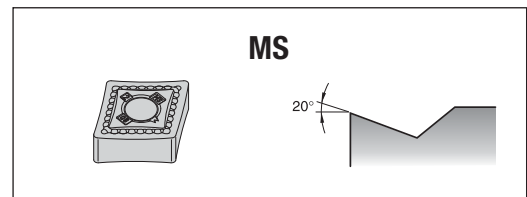
cutting conditions			
cutting speed (m/min) range	S1	15 55 140	10 40 60
	S2	15 60 140	10 30 75
	S3	15 70 140	15 40 75
	S4	15 70 170	15 55 105
carbide grade		KCU10	KCU25



ISO catalogue number	KCU10	KCU25	L10	R _ε	starting value		starting value		f/rev min	starting value feed rate (mm/rev)	f/rev max
					ap min	depth of cut (mm)	ap max	f/rev min			
 CNMG120404RP	4050682	4050453	12,90	0,4	0,60	2,00	3,50	0,18	0,30	0,40	
CNMG120408RP	4050689	4050057	12,90	0,8	1,00	3,00	4,50	0,20	0,45	0,60	
CNMG120412RP	4050695	4050456	12,90	1,2	1,20	3,50	5,00	0,22	0,50	0,65	
CNMG120416RP	4050699	4050459	12,90	1,6	1,40	4,00	5,00	0,25	0,50	0,70	
CNMG160608RP	4050701	4050461	16,12	0,8	1,00	3,00	7,00	0,20	0,45	0,60	
CNMG160612RP	4050704	4050463	16,12	1,2	1,20	3,50	7,00	0,22	0,50	0,65	
CNMG160616RP	-	4050465	16,12	1,6	1,40	4,00	8,00	0,25	0,50	0,70	
CNMG190612RP	4050712	4050468	19,34	1,2	1,20	3,50	9,00	0,22	0,50	0,70	
CNMG190616RP	4050714	4050470	19,34	1,6	1,40	4,00	9,00	0,25	0,60	0,80	
 DNMG110408RP	4053374	4050478	11,63	0,8	1,00	2,50	4,00	0,20	0,40	0,50	
DNMG150408RP	4053387	4050482	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60	
DNMG150412RP	4053391	4050485	15,50	1,2	1,20	3,00	5,00	0,22	0,50	0,65	
DNMG150416RP	4053393	-	15,50	1,6	1,40	3,50	5,00	0,25	0,50	0,70	
DNMG150608RP	4053403	4050488	15,50	0,8	1,00	2,50	5,00	0,20	0,45	0,60	
DNMG150612RP	4053407	4050490	15,50	1,2	1,20	3,00	5,00	0,22	0,50	0,65	
DNMG150616RP	-	4050491	15,50	1,6	1,40	3,50	5,00	0,25	0,50	0,70	
 SNMG120408RP	5062108	4121684	12,70	0,8	1,00	3,00	6,00	0,20	0,45	0,60	
SNMG120412RP	5062111	4050518	12,70	1,2	1,20	3,50	6,00	0,22	0,50	0,65	
SNMG120416RP	5090763	-	12,70	1,6	1,40	4,00	6,00	0,25	0,50	0,70	
SNMG150612RP	5062113	4050519	15,88	1,2	1,20	3,50	7,00	0,22	0,55	0,75	
SNMG150616RP	-	4121688	15,88	1,6	1,40	4,00	7,00	0,25	0,60	0,80	
SNMG190612RP	5062117	4050520	19,05	1,2	1,20	3,50	9,00	0,22	0,60	0,85	
SNMG190616RP	5062120	4121690	19,05	1,6	1,40	4,00	9,00	0,25	0,65	0,90	
 TNMG160408RP	5062137	4121698	16,50	0,8	1,00	3,00	6,00	0,20	0,45	0,60	
TNMG160412RP	-	4121699	16,50	1,2	1,20	3,50	6,00	0,22	0,50	0,65	
TNMG220408RP	5062142	4121702	22,00	0,8	1,00	3,00	7,50	0,20	0,45	0,65	
TNMG220412RP	5062145	4121704	22,00	1,2	1,20	3,50	7,50	0,22	0,50	0,70	
TNMG220416RP	-	4121705	22,00	1,6	1,40	4,00	7,50	0,25	0,55	0,75	
TNMG270612RP	5062147	-	27,50	1,2	1,20	3,50	9,00	0,22	0,50	0,70	
TNMG270616RP	6353749	-	27,50	1,6	1,40	4,00	9,00	0,25	0,55	0,75	
TNMG330924RP	5062148	-	33,00	2,4	2,00	6,00	13,00	0,30	0,65	0,90	
 VNMG160408RP	4045167	4121716	16,61	0,8	1,00	2,00	3,50	0,20	0,40	0,50	
VNMG160412RP	5090857	4121717	16,61	1,2	1,20	2,50	3,50	0,22	0,40	0,50	
 WNMG060408RP	4045178	4121721	6,52	0,8	1,00	3,00	4,00	0,20	0,40	0,50	
WNMG080408RP	4045185	4121725	8,69	0,8	1,00	3,00	5,00	0,20	0,45	0,60	
WNMG080412RP	4045188	4121726	8,69	1,2	1,20	3,50	5,00	0,22	0,50	0,65	
WNMG080416RP	-	4121727	8,69	1,6	1,40	4,00	5,00	0,25	0,50	0,70	

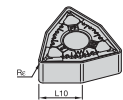
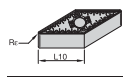
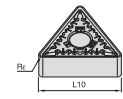
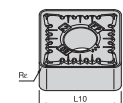
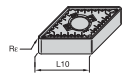
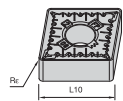
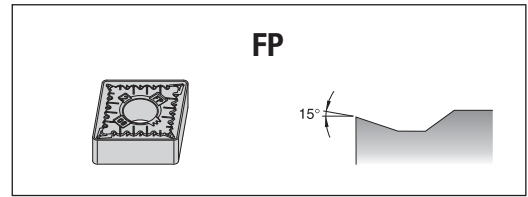


cutting conditions			
cutting speed (m/min) range	S1	15 55 140	10 40 60
	S2	15 60 140	10 30 75
	S3	15 70 140	15 40 75
	S4	15 70 170	15 55 105
carbide grade		KCU10	KCU25





ISO catalogue number	KCU10	KCU25	L10	R _ε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG120401MS	5090495	-	12,90	0,1	0,15	0,30	1,00	0,05	0,10	0,12
CNMG120402MS	5090494	4050399	12,90	0,2	0,30	0,60	1,50	0,08	0,15	0,20
CNMG120404MS	5090496	4050402	12,90	0,4	0,40	0,80	3,00	0,10	0,20	0,30
CNMG120408MS	5090497	4050454	12,90	0,8	0,60	1,20	4,00	0,12	0,25	0,35
CNMG120412MS	5090498	4050455	12,90	1,2	1,00	2,00	5,00	0,12	0,25	0,40
CNMG120416MS	5090499	4050458	12,90	1,6	1,20	2,50	5,00	0,14	0,25	0,40
CNMG160608MS	5090680	4050460	16,12	0,8	0,60	1,20	7,00	0,12	0,30	0,45
CNMG160612MS	5090681	4050462	16,12	1,2	1,00	2,00	7,00	0,14	0,30	0,45
CNMG190608MS	5090682	4050466	19,34	0,8	1,00	2,00	9,00	0,12	0,30	0,45
CNMG190612MS	5531238	5062149	19,34	1,2	1,20	2,50	9,00	0,12	0,30	0,50
CNMG190616MS	5090684	4050469	19,34	1,6	1,40	2,50	9,00	0,14	0,30	0,50
DNMG110408MS	5090685	4050477	11,63	0,8	0,60	1,20	3,50	0,12	0,25	0,35
DNMG150401MS	5090687	-	15,50	0,1	0,15	0,30	1,00	0,05	0,10	0,12
DNMG150402MS	5090686	4050479	15,50	0,2	0,30	0,60	2,00	0,08	0,15	0,20
DNMG150404MS	5090688	4050480	15,50	0,4	0,40	0,80	3,00	0,10	0,20	0,30
DNMG150408MS	5090689	4050481	15,50	0,8	0,60	1,20	4,00	0,12	0,25	0,35
DNMG150412MS	5090740	4050484	15,50	1,2	1,00	2,00	5,00	0,12	0,25	0,40
DNMG150604MS	5090741	4050486	15,50	0,4	0,40	0,80	3,00	0,10	0,20	0,30
DNMG150608MS	5090742	4050487	15,50	0,8	0,80	1,50	4,00	0,12	0,25	0,35
DNMG150612MS	5090743	4050489	15,50	1,2	1,00	2,00	5,00	0,12	0,25	0,40
SNMG120408MS	5090760	4121683	12,70	0,8	0,80	2,50	4,00	0,12	0,25	0,35
SNMG120412MS	5090761	4121685	12,70	1,2	1,00	3,00	5,00	0,12	0,25	0,40
SNMG150608MS	-	4121686	15,88	0,8	1,00	3,00	7,00	0,12	0,30	0,45
SNMG150612MS	-	4121687	15,88	1,2	1,20	3,50	7,00	0,14	0,30	0,45
SNMG190612MS	-	4121689	19,05	1,2	1,10	3,00	9,00	0,12	0,30	0,50
TNMG160402MS	5090767	4121695	16,50	0,2	0,30	0,90	2,00	0,08	0,15	0,20
TNMG160404MS	5090768	4121696	16,50	0,4	0,40	1,20	3,00	0,10	0,20	0,30
TNMG160408MS	5090769	4121697	16,50	0,8	0,80	2,50	4,00	0,12	0,25	0,35
TNMG220404MS	5090810	4121700	22,00	0,4	0,40	1,20	8,00	0,10	0,25	0,40
TNMG220408MS	5090811	4121701	22,00	0,8	0,80	2,50	9,00	0,12	0,30	0,45
TNMG220412MS	5090812	4121703	22,00	1,2	1,00	3,00	9,00	0,12	0,30	0,50
TNMG270608MS	-	4121706	27,50	0,8	0,80	2,50	11,00	0,12	0,30	0,50
VNMG160401MS	5090852	4121713	16,61	0,1	0,15	0,40	1,00	0,05	0,10	0,12
VNMG160402MS	5090851	4121712	16,61	0,2	0,30	0,70	2,00	0,08	0,15	0,20
VNMG160404MS	5090853	4121714	16,61	0,4	0,40	0,90	3,00	0,10	0,20	0,30
VNMG160408MS	5090854	4121715	16,61	0,8	0,80	2,00	4,00	0,12	0,25	0,35
VNMG220404MS	5090855	4121718	22,14	0,4	0,40	0,90	8,00	0,10	0,25	0,40
VNMG220408MS	5090856	4121719	22,14	0,8	0,80	2,00	9,00	0,12	0,30	0,45
WNMG060408MS	5090890	4121720	6,52	0,8	0,80	2,50	3,00	0,12	0,20	0,30
WNMG080401MS	5090892	-	8,69	0,1	0,15	0,50	1,00	0,05	0,10	0,12
WNMG080402MS	5090891	4121722	8,69	0,2	0,30	0,90	2,00	0,08	0,15	0,20
WNMG080404MS	5090893	4121723	8,69	0,4	0,40	1,20	3,00	0,10	0,20	0,30
WNMG080408MS	5090894	4121724	8,69	0,8	0,80	2,50	4,00	0,12	0,25	0,35

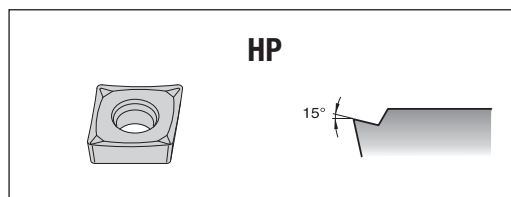
cutting conditions				
cutting speed (m/min) range	S1	15	55	140
	S2	15	60	140
	S3	15	70	140
	S4	15	70	170
carbide grade		KCU10		

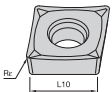
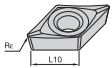
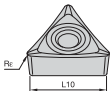
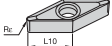


ISO catalogue number	KCU10	L10	Rr	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNMG120404FP	4171824	12,90	0,4	0,20	0,50	2,00	0,08	0,15	0,25
CNMG120408FP	4050061	12,90	0,8	0,40	1,00	2,50	0,10	0,20	0,30
CNMG120412FP	4050062	12,90	1,2	0,50	1,20	2,50	0,12	0,25	0,35
DNMG110404FP	4171826	11,63	0,4	0,20	0,50	2,00	0,08	0,15	0,25
DNMG110408FP	4050743	11,63	0,8	0,40	1,00	2,50	0,10	0,20	0,30
DNMG150404FP	4171827	15,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25
DNMG150408FP	4171828	15,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
DNMG150412FP	4171829	15,50	1,2	0,50	1,20	3,50	0,12	0,25	0,35
DNMG150604FP	4171830	15,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25
DNMG150608FP	4171831	15,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
SNMG120404FP	4171835	12,70	0,4	0,20	0,50	2,00	0,08	0,15	0,25
SNMG120408FP	4171836	12,70	0,8	0,40	1,00	2,50	0,10	0,20	0,30
TNMG160404FP	4171838	16,50	0,4	0,20	0,50	2,50	0,08	0,15	0,25
TNMG160408FP	4171839	16,50	0,8	0,40	1,00	3,00	0,10	0,20	0,30
TNMG160412FP	4171840	16,50	1,2	0,50	1,20	3,50	0,12	0,25	0,35
TNMG220404FP	4171841	22,00	0,4	0,20	0,50	3,00	0,08	0,15	0,25
TNMG220408FP	4171842	22,00	0,8	0,40	1,00	5,00	0,10	0,20	0,30
VNMG160404FP	4171843	16,61	0,4	0,20	0,40	2,00	0,08	0,15	0,25
VNMG160408FP	4171844	16,61	0,8	0,30	0,60	2,50	0,10	0,20	0,30
WNMG060404FP	4050746	6,52	0,4	0,20	0,50	2,00	0,08	0,15	0,25
WNMG080404FP	4171849	8,69	0,4	0,20	0,50	2,00	0,08	0,15	0,25
WNMG080408FP	4171851	8,69	0,8	0,40	1,00	2,50	0,10	0,20	0,30



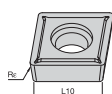
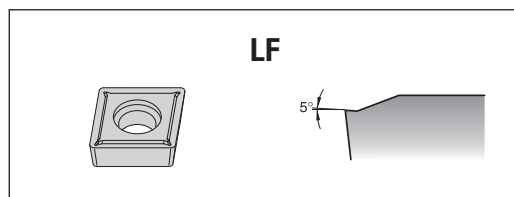
cutting conditions			
cutting speed (m/min) range	S1	15 55 140	10 40 60
	S2	15 60 140	10 30 75
	S3	15 70 140	15 40 75
	S4	15 70 170	15 55 105
carbide grade		KCU10	KCU25



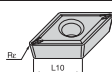
ISO catalogue number	KCU10	KCU25	L10	Rε	starting value			starting value		
					ap min	depth of cut (mm)	ap max	f/rev min	feed rate (mm/rev)	f/rev max
 CCGT060202HP	4045134	4050372	6,45	0,2	0,20	0,40	1,00	0,05	0,10	0,15
CCGT060204HP	4045137	4050403	6,45	0,4	0,40	0,80	1,80	0,08	0,15	0,30
CCGT060208HP	-	4050404	6,45	0,8	0,60	1,10	2,00	0,10	0,25	0,40
CCGT09T302HP	4045141	4050405	9,67	0,2	0,20	0,40	1,50	0,05	0,10	0,15
CCGT09T304HP	4045194	4050406	9,67	0,4	0,40	0,80	2,00	0,08	0,15	0,30
CCGT09T308HP	4045196	4050407	9,67	0,8	0,60	1,10	2,30	0,10	0,25	0,40
CCGT120402HP	4045198	4050408	12,90	0,2	0,20	0,40	2,00	0,05	0,10	0,15
CCGT120404HP	4045199	-	12,90	0,4	0,40	0,80	3,50	0,08	0,15	0,30
CCGT120408HP	4045200	-	12,90	0,8	0,60	1,10	4,00	0,10	0,25	0,40
 DCGT070202HP	4045237	4050421	7,75	0,2	0,20	0,40	1,00	0,05	0,10	0,15
DCGT070204HP	4045239	4050422	7,75	0,4	0,40	0,80	1,80	0,08	0,15	0,30
DCGT070208HP	4045240	-	7,75	0,8	0,60	1,10	2,00	0,10	0,25	0,40
DCGT11T302HP	4045241	4050424	11,63	0,2	0,20	0,40	1,50	0,05	0,10	0,15
DCGT11T304HP	4045263	4050425	11,63	0,4	0,40	0,80	2,00	0,08	0,15	0,30
DCGT11T308HP	4045264	4050426	11,63	0,8	0,60	1,10	2,30	0,10	0,25	0,40
 TCGT110202HP	-	4050434	11,00	0,2	0,20	0,40	1,00	0,05	0,10	0,15
TCGT110204HP	-	4050435	11,00	0,4	0,40	0,70	1,80	0,08	0,15	0,30
TCGT16T302HP	-	4050437	16,50	0,2	0,20	0,40	2,00	0,05	0,10	0,15
TCGT16T304HP	4045316	-	16,50	0,4	0,40	0,70	3,50	0,08	0,15	0,30
TCGT16T308HP	4045318	-	16,50	0,8	0,60	1,00	4,00	0,10	0,25	0,40
 VBGT110302HP	4045335	-	11,07	0,2	0,20	0,40	1,00	0,05	0,10	0,15
VBGT110304HP	4045338	4050447	11,07	0,4	0,40	0,70	1,80	0,08	0,15	0,30
VBGT160404HP	4045342	4050448	16,61	0,4	0,40	0,70	3,50	0,08	0,15	0,30
VBGT160408HP	4045344	4050449	16,61	0,8	0,60	1,00	4,00	0,10	0,25	0,40



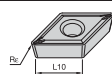
cutting conditions				
cutting speed (m/min) range	S1	15	55	140
	S2	15	60	140
	S3	15	70	140
	S4	15	70	170
carbide grade		KCU10		



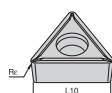
ISO catalogue number	KCU10	L10	R _e	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCGT060201LF	4045136	6,45	0,1	0,05	0,15	1,00	0,04	0,05	0,08
CCGT060202LF	4045135	6,45	0,2	0,10	0,20	1,50	0,06	0,10	0,12
CCGT060204LF	4045138	6,45	0,4	0,30	0,60	2,00	0,08	0,15	0,20
CCGT060208LF	4045140	6,45	0,8	0,60	1,10	2,30	0,10	0,20	0,30
CCGT09T301LF	4045193	9,67	0,1	0,08	0,20	1,00	0,04	0,05	0,08
CCGT09T302LF	4045142	9,67	0,2	0,18	0,40	1,50	0,06	0,10	0,12
CCGT09T304LF	4045195	9,67	0,4	0,30	0,60	2,00	0,08	0,20	0,30
CCGT09T308LF	4045197	9,67	0,8	0,60	1,10	2,30	0,10	0,25	0,40



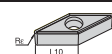
DCGT070201LF	4045238	7,75	0,1	0,05	0,10	1,00	0,04	0,05	0,08
DCGT11T301LF	4045242	11,63	0,1	0,05	0,10	1,00	0,04	0,05	0,08



DCMT11T308LF	4045269	11,63	0,8	0,80	2,00	2,30	0,10	0,20	0,30
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TCGT110204LF	4044822	11,00	0,4	0,30	0,60	2,00	0,08	0,20	0,30
TCGT16T304LF	4045317	16,50	0,4	0,30	0,60	2,00	0,08	0,20	0,30
TCGT16T308LF	4045319	16,50	0,8	0,60	1,10	2,30	0,10	0,25	0,40



VBGT110301LF	4045337	11,07	0,1	0,05	0,15	1,00	0,04	0,05	0,08
VBGT110302LF	4045336	11,07	0,2	0,10	0,20	1,50	0,06	0,10	0,12
VBGT110304LF	4045339	11,07	0,4	0,30	0,60	2,00	0,08	0,15	0,20
VBGT160401LF	4045341	16,61	0,1	0,05	0,15	1,00	0,04	0,05	0,08
VBGT160402LF	4045340	16,61	0,2	0,10	0,20	1,50	0,06	0,10	0,12
VBGT160404LF	4045343	16,61	0,4	0,30	0,60	2,00	0,08	0,15	0,20





cutting conditions				
cutting speed (m/min) range	H1	120	180	260
	H2	120	180	260
	H3	80	120	180
	H4	80	120	180
PcBN grade		KBH20		

Edge Preparation Details:

..S01015/..S0415:
Light machining and finishing, smooth cuts only

..S01225/..S0525: Medium machining:
From smooth cut to light interrupted cutting conditions

..FW.: Wiper Geometry

ISO catalogue number	KBH20	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CNGA120408S01225MT	5330699	12,90	0,8	0,10	0,30	0,50	0,10	0,15	0,20
CNGA120412S01225MT	5330833	12,90	1,2	0,12	0,30	0,40	0,10	0,15	0,24

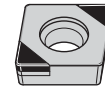
CNGA120408S01015FWMT	5330832	12,90	0,8	0,10	0,20	0,50	0,10	0,15	0,20
CNGA120412S01015FWMT	5330836	12,90	1,2	0,10	0,20	0,50	0,10	0,15	0,20

DNGA150608S01225MT	5330850	15,50	0,8	0,12	0,30	0,40	0,10	0,15	0,20
DNGA150612S01015MT	5330854	15,50	1,2	0,10	0,30	0,40	0,10	0,15	0,20

VNGA160412S01225MT	5330873	16,61	1,2	0,10	0,30	0,40	0,10	0,15	0,20
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cutting conditions				
cutting speed (m/min) range	H1	120	180	260
	H2	120	180	260
	H3	80	120	180
	H4	80	120	180
PcBN grade		KBH20		

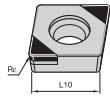
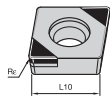


Edge Preparation Details:

..S01015/..S0415:
Light machining and finishing, smooth cuts only

..S01225/..S0525: Medium machining:
From smooth cut to light interrupted
cutting conditions

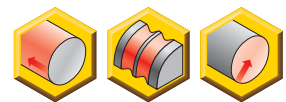
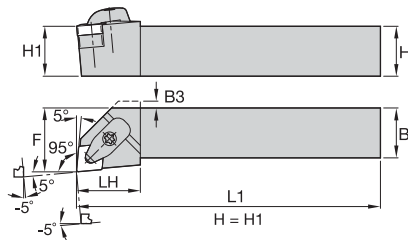
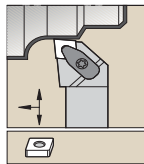
..FW..: Wiper Geometry



ISO catalogue number	KBH20	L10	Rε	ap min	starting value depth of cut (mm)	ap max	f/rev min	starting value feed rate (mm/rev)	f/rev max
CCGW09T304S01015FWMT	5330136	9,67	0,4	0,08	0,20	0,25	0,08	0,10	0,15
CCGW09T308S01015FWMT	5330139	9,67	0,8	0,10	0,20	0,30	0,08	0,15	0,20
CCGW09T308S01015MT	5330138	9,67	0,8	0,10	0,20	0,30	0,08	0,15	0,18
CCGW09T308S01225MT	5330137	9,67	0,8	0,12	0,30	0,40	0,08	0,15	0,20



TURNING
FIRST CHOICE

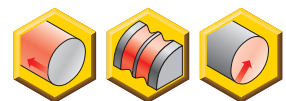
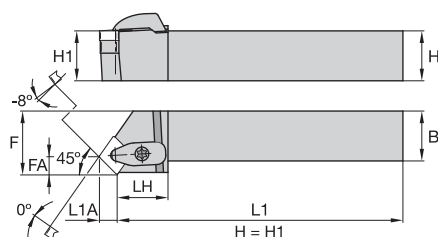
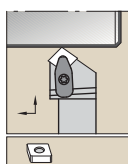


■ DCLN-KC 95°



order number	catalogue number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
1875199	DCLNR2020K12KC04	20	20	25,0	125	32,0	4,0	CN..120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP
1875193	DCLNR2525M12KC04	25	25	32,0	150	32,0	—	CN..120408	ICSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
1875212	DCLNR2525M16KC06	25	25	32,0	150	33,0	—	CN..160612	ICSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
1875223	DCLNR3225P12KC04	32	25	32,0	170	32,0	—	CN..120408	ICSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
1875224	DCLNR3232P16KC06	32	32	40,0	170	33,0	—	CN..160612	ICSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
2273091	DCLNR3232P19KC06	32	32	40,0	170	40,0	—	CN..190612	ICSN643	KMSP625IP	25 IP	CM210R ASSY	25 IP	SSP025016M	KLM68L25IP
left hand															
1875194	DCLNL2020K12KC04	20	20	25,0	125	32,0	4,0	CN..120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP
1875196	DCLNL2525M12KC04	25	25	32,0	150	32,0	—	CN..120408	ICSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
1875205	DCLNL2525M16KC06	25	25	32,0	150	33,0	—	CN..160612	ICSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
1875231	DCLNL3225P12KC04	32	25	32,0	170	32,0	—	CN..120408	ICSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
1875230	DCLNL3225P16KC06	32	25	32,0	170	33,0	—	CN..160612	ICSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
1875225	DCLNL3232P16KC06	32	32	40,0	170	33,0	—	CN..160612	ICSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
2273093	DCLNL3232P19KC06	32	32	40,0	170	40,0	—	CN..190612	ICSN643	KMSP625IP	25 IP	CM210R ASSY	25 IP	SSP025016M	KLM68L25IP

MILLING
FIRST CHOICE

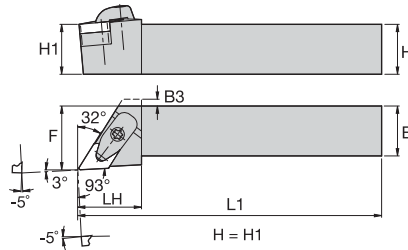
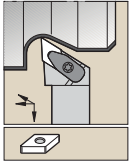


■ DCSN-KC 45°

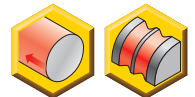
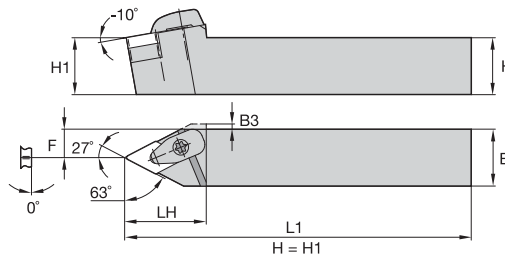
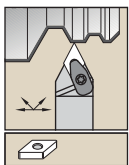


order number	catalogue number	H	B	F	L1	LH	FA	L1A	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand																
2273102	DCSNR2525M12KC04	25	25	32,0	150	35,0	8,2	8,5	CN..120408	ICSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP

TOOLING SYSTEMS
FIRST CHOICE


DDJN-KC 93°

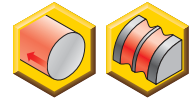
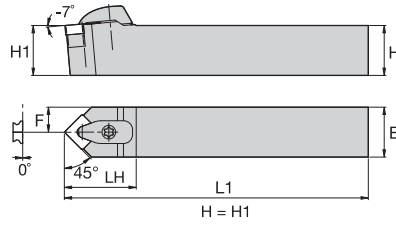

order number	catalogue number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin	
right hand																
2273105	DDJNR2020K11KC04	20	20	25,0	125	30,0	2,0	DN..110408	IDSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1875197	DDJNR2020K15KC06	20	20	25,0	125	32,0	4,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
2273106	DDJNR2525M11KC04	25	25	32,0	150	30,0	—	DN..110408	IDSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1875191	DDJNR2525M15KC06	25	25	32,0	150	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
1875208	DDJNR3225P15KC06	32	25	32,0	170	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
1875227	DDJNR3232P15KC06	32	32	40,0	170	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
left hand																
2273107	DDJNL2020K11KC04	20	20	25,0	125	30,0	2,0	DN..110408	IDSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1875198	DDJNL2020K15KC06	20	20	25,0	125	32,0	4,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
2273108	DDJNL2525M11KC04	25	25	32,0	150	30,0	—	DN..110408	IDSN322	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1875192	DDJNL2525M15KC06	25	25	32,0	150	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
1875207	DDJNL3225P15KC06	32	25	32,0	170	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
1875209	DDJNL3232P15KC06	32	32	40,0	171	32,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	


DDNN-KC 63°


order number	catalogue number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin	
right hand																
2273111	DDNNR2020K15KC06	20	20	10,0	125	40,0	2,5	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	
2273112	DDNNR2525M15KC06	25	25	13,0	150	40,0	—	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	



TURNING
FIRST CHOICE

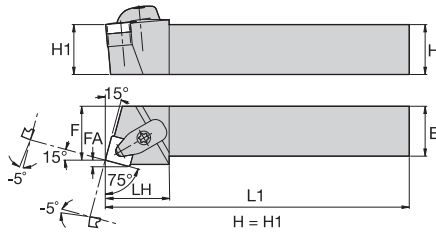
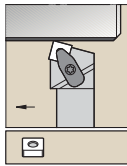


■ DSDN-KC 45°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
1875211	DSDNN2525M12KC04	25	25	12,0	150	36,0	SN..120408	ISSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
1875216	DSDNN2525M15KC06	25	25	12,0	150	42,0	SN..150612	ISSN543	KMSP515IP	15 IP	CM209R ASSY	15 IP	SSP025016M	KLM58L15IP
2273139	DSDNN3232P19KC06	32	32	15,5	170	44,0	SN..190612	ISSN643	KMSP625IP	25 IP	CM210R ASSY	25 IP	SSP025016M	KLM68L25IP

MILLING
FIRST CHOICE



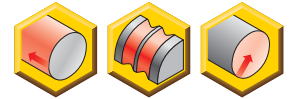
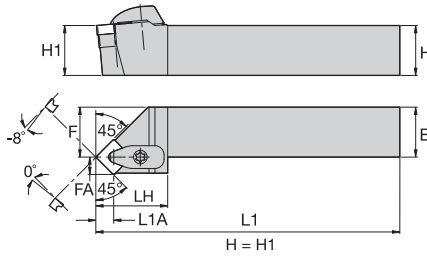
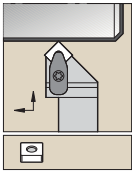
■ DSRN-KC 75°



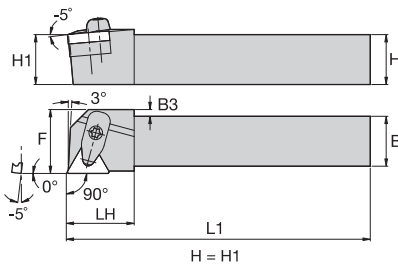
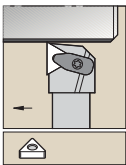
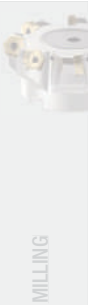
order number	catalogue number	H	B	F	L1	LH	FA	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
1875228	DSRNR2525M12KC04	25	25	27,0	150	32,0	3,3	SN..120408	ISSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP

HOLEMAKING
FIRST CHOICE

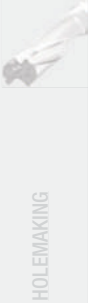
TOOLING SYSTEMS
FIRST CHOICE


■ DSSN-KC 45°

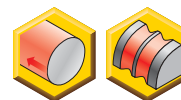
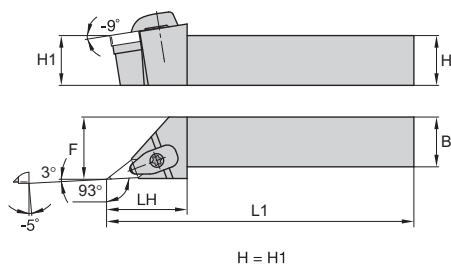
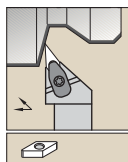

order number	catalogue number	H	B	F	L1	LH	FA	L1A	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand																
1875195	DSSNR2525M12KC04	25	25	32,0	150	36,0	8,4	9,6	SN..120408	ISSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP
left hand																
1875203	DSSNL2525M12KC04	25	25	32,0	150	36,0	8,4	8,7	SN..120408	ISSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP


■ DTGN-KC 90°


order number	catalogue number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin	
right hand																
2273441	DTGNR2525M16KC04	25	25	32,0	150	25,0	—	TN..160408	ITSN323	KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
left hand																
1875234	DTGNL2525M22KC04	25	25	32,0	150	32,0	3,0	TN..220408	ITSN443	KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM46L15IP	



TURNING
FIRST CHOICE

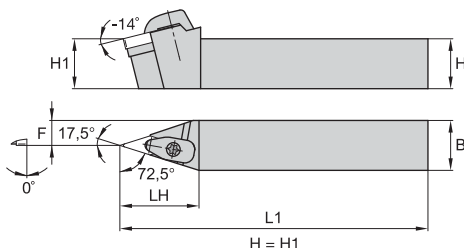
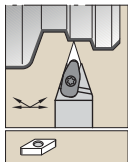


■ DVJN-KC 93°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin	
right hand															
2439399	DVJNR2020K16KC04	20	20	25,0	125	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	
2439401	DVJNR2525M16KC04	25	25	32,0	150	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	
2439443	DVJNR3225P16KC04	32	25	32,0	170	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	
left hand															
2439400	DVJNL2020K16KC04	20	20	25,0	125	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	
2439402	DVJNL2525M16KC04	25	25	32,0	150	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	
2439444	DVJNL3225P16KC04	32	25	32,0	170	46,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP	

MILLING
FIRST CHOICE

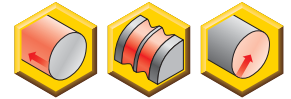
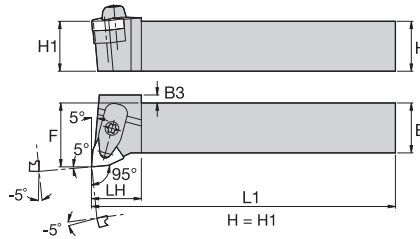
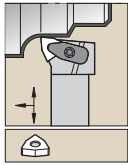


■ DVVN-KC 72,5°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
2439455	DVVNN2020K16KC04	20	20	10,0	150	48,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP
2439456	DVVNN2525M16KC04	25	25	12,0	150	48,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	15 IP	SSP025016M	KLM34L9IP

TOOLING SYSTEMS
FIRST CHOICE



TURNING

FIRST CHOICE


MILLING

FIRST CHOICE

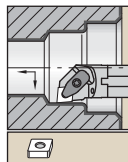

HOLEMAKING

FIRST CHOICE

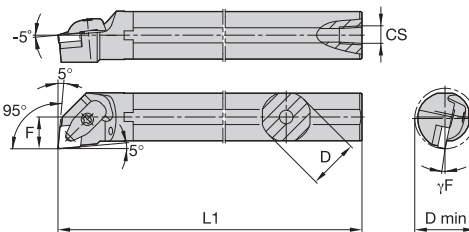

TOOLING SYSTEMS

FIRST CHOICE
■ DWLN-KC 95°

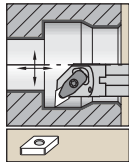
order number	catalogue number	H	B	F	L1	LH	B3	gage insert	shim	shim screw	Torx Plus	clamp assembly	Torx Plus	slotted pin	optional lock pin
right hand															
2439476	DWLN2020K06KC04	20	20	25,0	125	31,0	—	WN..060408	IWSN322 KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
2439471	DWLN2020K08KC04	20	20	25,0	125	33,0	—	WN..080408	IWSN433 KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP	
2273451	DWLN2525M06KC04	25	25	32,0	150	25,0	—	WN..060408	IWSN322 KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1908860	DWLN2525M08KC04	25	25	32,0	150	25,0	4,0	WN..080408	IWSN433 KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP	
1908862	DWLN3232P08KC04	32	32	40,0	170	25,0	—	WN..080408	IWSN433 KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP	
left hand															
2439472	DWLN2020K08KC04	20	20	25,0	125	33,0	—	WN..080408	IWSN433 KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP	
2273455	DWLN2525M06KC04	25	25	32,0	150	25,0	—	WN..060408	IWSN322 KMSP315IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM34L9IP	
1908861	DWLN2525M08KC04	25	25	32,0	150	25,0	4,0	WN..080408	IWSN433 KMSP415IP	15 IP	CM234R ASSY	15 IP	SSP025016M	KLM4615IP	

Boring Bars for Negative Inserts


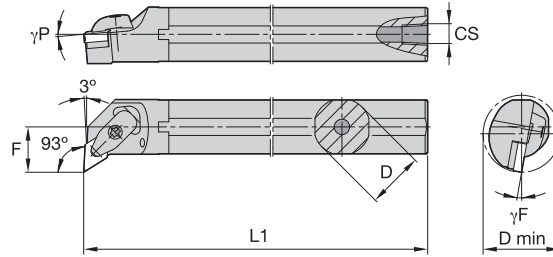
Steel shank with through coolant.


■ A-DCLN-KC 95°

order number	catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
2441867	A25RDCLNR12KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	CN.120408	—	—	15 IP	CM234R ASSY	SSP025016M	15 IP
2441931	A32SDCLNR12KC04	32	40,0	22,0	250	1/4-18 NPT	-12,0	CN.120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441933	A40TDCLNR12KC04	40	50,0	27,0	300	1/4-18 NPT	-9,0	CN..120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
left hand														
2441930	A25RDCLNL12KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	CN.120408	—	—	15 IP	CM234R ASSY	SSP025016M	15 IP
2441932	A32SDCLNL12KC04	32	40,0	22,0	250	1/4-18 NPT	-12,0	CN.120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441934	A40TDCLNL12KC04	40	50,0	27,0	300	1/4-18 NPT	-9,0	CN.120408	ICSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP



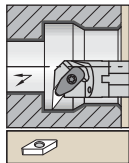
Steel shank with through coolant.



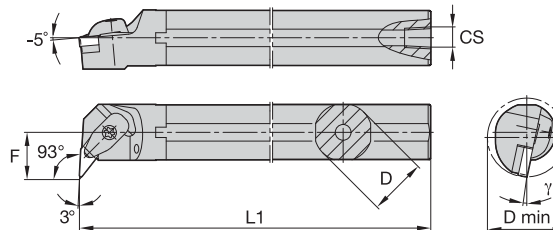
■ A-DDUN-KC 93°



order number	catalogue number	D	D min	F	L1	CS	γF°	γP°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand															
2441939	A25RDDUNR11KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	-5,0	DN..110408	—	—	—	CM234R ASSY	SSP025016M	15 IP
2441941	A32SDDUNR11KC04	32	40,0	22,0	250	1/4-18 NPT	-12,0	-5,0	DN..110408	IDSN322	KMSP315IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441945	A32SDDUNR15KC06	32	40,0	22,0	250	1/4-18 NPT	-12,0	-6,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441947	A40TDDUNR15KC06	40	50,0	27,0	300	1/4-18 NPT	-9,0	-5,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
left hand															
2441940	A25RDDUNL11KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	-5,0	DN..110408	—	—	—	CM234R ASSY	SSP025016M	15 IP
2441946	A32SDDUNL15KC06	32	40,0	22,0	250	1/4-18 NPT	-12,0	-6,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441948	A40TDDUNL15KC06	40	50,0	27,0	300	1/4-18 NPT	-9,0	-5,0	DN..150608	IDSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP



Steel shank with through coolant.

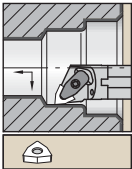


■ A-DVUN-KC 93°

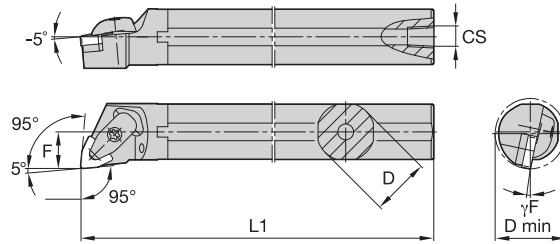


order number	catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus	
right hand															
2441916	A32SDVUNR16KC04	32	40,0	22,0	250	1/4-18 NPT	-10,5	VN..160408	IVSN322	KMSP315IP	15 IP	CM234R ASSY	SSP025016M	15 IP	
2441918	A40TDVUNR16KC04	40	50,0	27,0	300	1/4-18 NPT	-10,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	SSP025016M	15 IP	
left hand															
2441917	A32SDVUNL16KC04	32	40,0	22,0	250	1/4-18 NPT	-10,5	VN..160408	IVSN322	KMSP315IP	15 IP	CM234R ASSY	SSP025016M	15 IP	
2441919	A40TDVUNL16KC04	40	50,0	27,0	300	1/4-18 NPT	-10,0	VN..160408	IVSN322	KMSP315IP	15 IP	CM215R ASSY	SSP025016M	15 IP	





Steel shank with through coolant.



TURNING

FIRST CHOICE



MILLING

FIRST CHOICE



HOLEMAKING

FIRST CHOICE



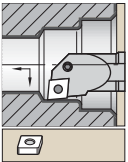
TOOLING SYSTEMS

FIRST CHOICE

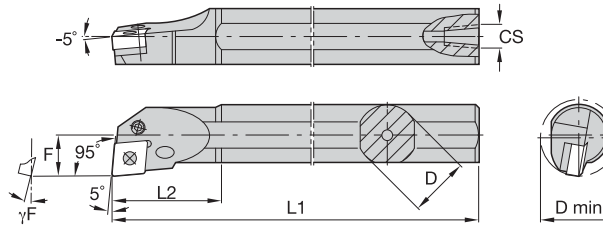
■ A-DWLN-KC 95°



order number	catalogue number	D	D min	F	L1	CS	γF°	gage insert	shim	shim screw	Torx Plus	clamp assembly	slotted pin	Torx Plus
right hand														
2441921	A25RDWLNK06KC04	25	32,0	17,0	200	1/4-18 NPT	-14,0	WN..060408	—	—	—	CM234R ASSY	SSP025016M	15 IP
2441923	A25RDWLNK08KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	WN..080408	—	—	—	CM234R ASSY	SSP025016M	15 IP
2441925	A32SDWLNK08KC04	32	40,0	22,0	250	1/4-18 NPT	-14,0	WN..080408	IWSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
2441927	A40TDWLNK08KC04	40	50,0	27,0	300	1/4-18 NPT	-14,0	WN..080408	IWSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP
left hand														
2441924	A25RDWLNK08KC04	25	32,0	17,0	200	1/4-18 NPT	-12,0	WN..080408	—	—	—	CM234R ASSY	SSP025016M	15 IP
2441926	A32SDWLNK08KC04	32	40,0	22,0	250	1/4-18 NPT	-14,0	WN..080408	IWSN433	KMSP415IP	15 IP	CM234R ASSY	SSP025016M	15 IP



Steel shank with through coolant.



HOLEMAKING

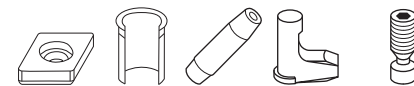
FIRST CHOICE



TOOLING SYSTEMS

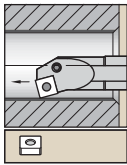
FIRST CHOICE

■ A-PCLN 95°

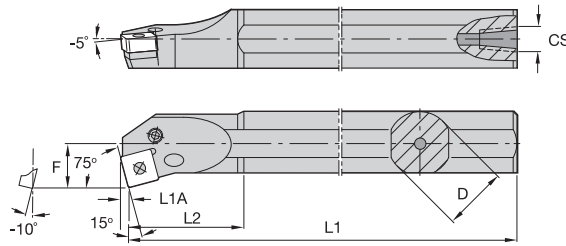


order number	catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	shim pin	punch pin	toggle lever	lever screw	Torx Plus
right hand															
2447150	A25TPCLNR12	25	32,0	17,0	300	40	1/4-18 NPT	-12,0	CN..120408	—	—	—	511.022	514.122	10 IP
2447152	A32UPCLNR12	32	40,0	22,0	350	50	1/4-18 NPT	-10,0	CN..120408	512.112	513.023	515.018	511.023	514.123	15 IP
2447476	A32UPCLNR16	32	50,0	22,0	350	50	1/4-18 NPT	-10,0	CN..160612	512.117	513.025	515.022	511.025	514.125	15 IP
2447533	A40VPCLNR12	40	50,0	27,0	400	55	1/4-18 NPT	-10,0	CN..120408	512.112	513.023	515.018	511.023	514.123	15 IP
2447478	A40VPCLNR16	40	50,0	27,0	400	55	1/4-18 NPT	-11,0	CN..160612	512.117	513.025	515.022	511.025	514.125	15 IP
left hand															
2447151	A25TPCLNL12	25	32,0	17,0	300	40	1/4-18 NPT	-12,0	CN..120408	—	—	—	511.022	514.122	10 IP
2447473	A32UPCLNL12	32	40,0	22,0	350	50	1/4-18 NPT	-10,0	CN..120408	512.112	513.023	515.018	511.023	514.123	15 IP
2447534	A40VPCLNL12	40	50,0	27,0	400	55	1/4-18 NPT	-10,0	CN..120408	512.112	513.023	515.018	511.023	514.123	15 IP

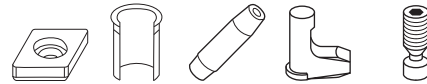
TURNING
FIRST CHOICE



Steel shank with through coolant.

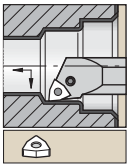


■ A-PSKN 75°

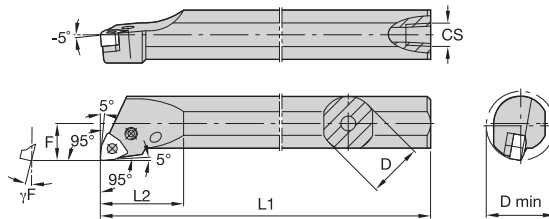


order number	catalogue number	D	D min	F	L1	L2	L1A	CS	gage insert	shim	shim pin	punch pin	toggle lever	lever screw	Torx Plus
right hand															
2447482	A32UPSKNR12	32	40,0	22,0	350	52	3,0	1/4-18 NPT	SN..120408	512.063	513.023	515.018	511.023	514.124	15 IP

MILLING
FIRST CHOICE



Steel shank with through coolant.



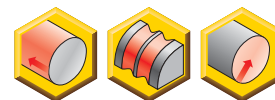
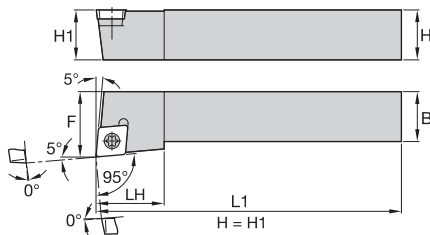
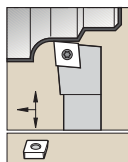
■ A-PWLN 95°




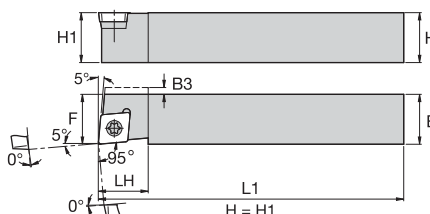
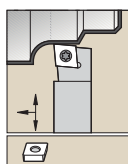
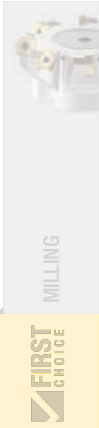
order number	catalogue number	D	D min	F	L1	L2	CS	γF°	gage insert	shim	shim pin	punch pin	toggle lever	lever screw	Torx Plus
right hand															
1244113	A16RPWLNRO6	16	27,0	11,0	200	32	1/8-27 NPT	-12,0	WN..060404	—	—	—	511.030	514.112	8 IP
1244115	A20SPWLNRO6	20	25,0	13,0	250	—	1/8-27 NPT	-14,0	WN..060408	—	—	—	511.030	514.112	8 IP
1194440	A25RPWLNRO8	25	32,0	17,0	200	—	1/4-18 NPT	-12,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP
1244118	A32SPWLNRO8	32	40,0	22,0	250	50	1/4-18 NPT	-10,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP
1244120	A40TPWLNRO8	40	50,0	27,0	300	54	1/4-18 NPT	-8,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP
left hand															
1191396	A16RPWLNLO6	16	27,0	11,0	200	32	1/8-27 NPT	-12,0	WN..060404	—	—	—	511.030	514.112	8 IP
1244114	A20SPWLNLO6	20	25,0	13,0	250	—	1/8-27 NPT	-14,0	WN..060408	—	—	—	511.030	514.112	8 IP
1244116	A25RPWLNLO8	25	32,0	17,0	200	—	1/4-18 NPT	-12,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP
1244117	A32SPWLNLO8	32	40,0	22,0	250	50	1/4-18 NPT	-10,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP
1244119	A40TPWLNLO8	40	50,0	27,0	300	54	1/4-18 NPT	-8,0	WN..080408	512.135	513.023	515.018	511.023	514.123	15 IP


HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE


■ SCLC 95°

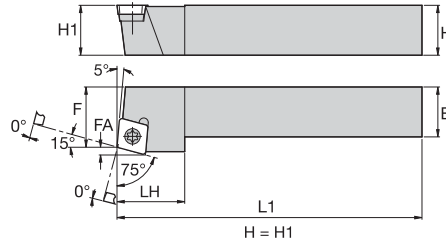
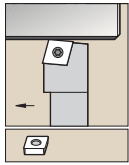
order number	catalogue number	H	B	F	L1	LH	gage insert					Torx
								shim	shim screw	hex	insert screw	
right hand												
1097816	SCLCR1010M06	10	10	12,0	150	12,0	CC..060204	—	—	—	MS1153	T7
1097818	SCLCR1212N09	12	12	16,0	160	16,0	CC..09T308	—	—	—	MS1155	T15
1097819	SCLCR1616H09	16	16	20,0	100	15,8	CC..09T308	SKCP343	SRS3	3.5 mm	MS1156	T15
1097821	SCLCR2020K09	20	20	25,0	125	15,8	CC..09T308	SKCP343	SRS3	3.5 mm	MS1156	T15
1097820	SCLCR2020K12	20	20	25,0	125	19,8	CC..120408	SKCP453	SRS4	4 mm	MS1158	T15
left hand												
1097963	SCLCL1212N09	12	12	16,0	160	16,0	CC..09T308	—	—	—	MS1155	T15
1097964	SCLCL1616H09	16	16	20,0	100	15,8	CC..09T308	SKCP343	SRS3	3.5 mm	MS1156	T15
1097966	SCLCL2020K09	20	20	25,0	125	15,8	CC..09T308	SKCP343	SRS3	3.5 mm	MS1156	T15


■ SCLC-F 95°

order number	catalogue number	H	B	F	L1	LH	gage insert					Torx
								shim	shim screw	hex	insert screw	
right hand												
1097812	SCLCRF1010M06Q	10	10	10,0	150	11,0	CC..060204	—	—	—	MS1153	T7
1097813	SCLCRF1212M06Q	12	12	12,0	150	11,0	CC..060204	—	—	—	MS1153	T7
1097817	SCLCRF1616K09Q	16	16	16,0	125	16,0	CC..09T308	SKCP343	SRS3	3.5 mm	MS1156	T15



TURNING
FIRST CHOICE

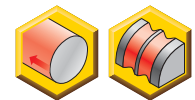
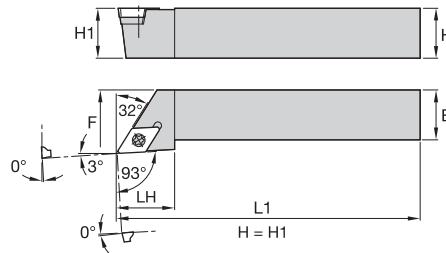
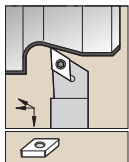


■ SCRC 75°



order number	catalogue number	H	B	F	L1	LH	FA	gage insert	insert screw	Torx
right hand										
1097828	SCRCR1212N09	12	12	13,0	160	14,0	2,3	CC..09T308	MS1155	T15

MILLING
FIRST CHOICE



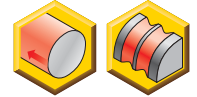
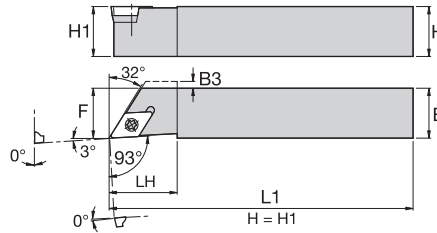
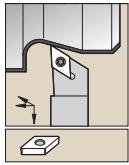
■ SDJC 93°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1097848	SDJCR1010M07	10	10	12,0	150	16,0	DC..070204	—	—	—	MS1153	T7
1097849	SDJCR1212N07	12	12	16,0	160	16,0	DC..070204	—	—	—	MS1153	T7
1097850	SDJCR1212N11	12	12	16,0	160	22,0	DC..11T308	—	—	—	MS1155	T15
1244972	SDJCR1616H07	16	16	20,0	100	16,0	DC..070204	—	—	—	MS1153	T7
1097851	SDJCR1616H11	16	16	20,0	100	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1244974	SDJCR2020K07	20	20	25,0	125	16,0	DC..070204	—	—	—	MS1153	T7
1097853	SDJCR2020K11	20	20	25,0	125	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1097854	SDJCR2525M11	25	25	32,0	150	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1097855	SDJCR2525M15	25	25	32,0	150	32,0	DC..150408	SKDP453	SRS4	4 mm	MS1158	T15
left hand												
1098000	SDJCL1212N11	12	12	16,0	160	22,0	DC..11T308	—	—	—	MS1155	T15
1098001	SDJCL1616H11	16	16	20,0	100	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1244968	SDJCL2020K07	20	20	25,0	125	16,0	DC..070204	—	—	—	MS1153	T7
1098003	SDJCL2020K11	20	20	25,0	125	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1192473	SDJCL2525M11	25	25	32,0	150	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15
1098004	SDJCL2525M15	25	25	32,0	150	32,0	DC..150408	SKDP453	SRS4	4 mm	MS1158	T15

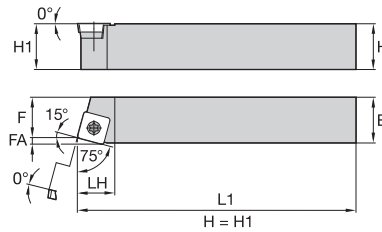
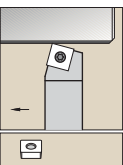
HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE



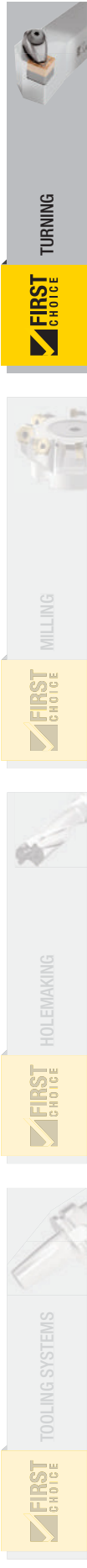
■ SDJC-F 93°

order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1097844	SDJCRF1010M07Q	10	10	10,0	150	16,0	DC..070204	—	—	—	MS1153	T7
1097845	SDJCRF1212M07Q	12	12	12,0	150	16,0	DC..070204	—	—	—	MS1153	T7
1097846	SDJCRF1616K11Q	16	16	16,0	125	22,0	DC..11T308	SKDP343	SRS3	3.5 mm	MS1156	T15

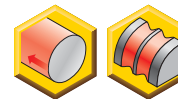
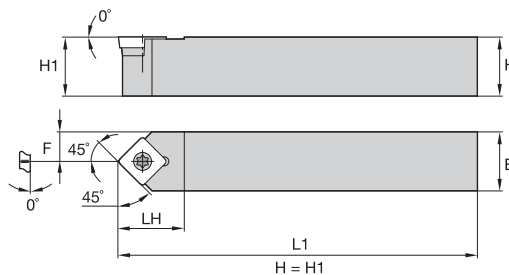
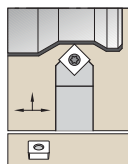


■ SSBC 75°

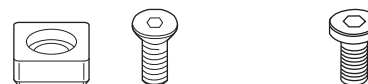
order number	catalogue number	H	B	F	L1	LH	FA	gage insert	shim	shim screw	hex	insert screw	Torx
right hand													
1097867	SSBCR2525M12	25	25	22,0	150	21,0	3,1	SC..120408	SKSP453	SRS4	4 mm	MS1158	T15



TURNING
FIRST CHOICE

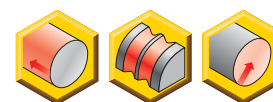
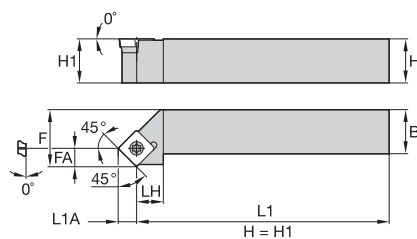
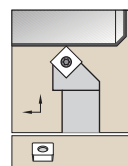


■ SSDC 45°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
1098005	SSDCN1212N09	12	12	6,0	160	18,0	SC..09T308	—	—	—	MS1155	T15
1098006	SSDCN1616H09	16	16	8,0	100	18,0	SC..09T308	SKSP343	SRS3	3.5 mm	MS1156	T15
1098007	SSDCN2020K09	20	20	10,0	125	18,0	SC..09T308	SKSP343	SRS3	3.5 mm	MS1156	T15

MILLING
FIRST CHOICE



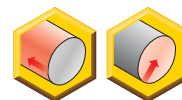
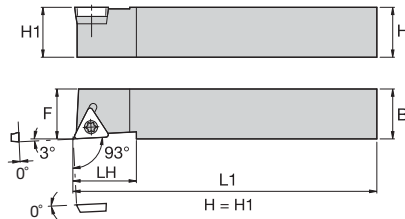
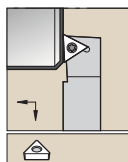
■ SSSC 45°



order number	catalogue number	H	B	F	L1	LH	FA	L1A	gage insert	shim	shim screw	hex	insert screw	Torx
right hand														
1097808	SSSCR1212N09	12	12	16,0	160	18,0	5,8	6,1	SC..09T308	—	—	—	MS1155	T15
1097809	SSSCR1616H09	16	16	20,0	100	18,0	6,1	6,1	SC..09T308	SKSP343	SRS3	3.5 mm	MS1156	T15
1097810	SSSCR2020K12	20	20	25,0	125	25,0	8,1	8,3	SC..120408	SKSP453	SRS4	4 mm	MS1158	T15

HOLEMAKING
FIRST CHOICE

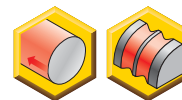
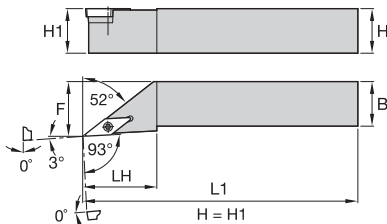
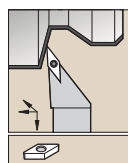
TOOLING SYSTEMS
FIRST CHOICE



■ STJC-F 93°



order number	catalogue number	H	B	F	L1	LH	gage insert	insert screw	Torx
right hand									
1772197	STJCRF1212M11Q	12	12	12,0	150	16,0	TC..110204	MS1153	T7

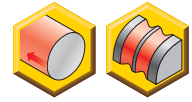
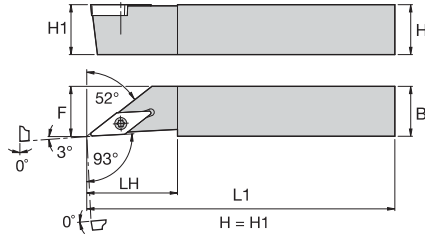
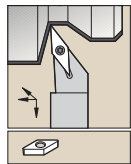


■ SVJB 93°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1097800	SVJBR1212N11	12	12	16,0	160	22,0	VB..110304	—	—	—	MS1153	T7
1097801	SVJBR1616H11	16	16	20,0	100	22,0	VB..110304	—	—	—	MS1153	T7
1244959	SVJBR1616H16	16	16	20,0	100	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1252235	SVJBR2020K11	20	20	25,0	125	26,0	VB..110304	—	—	—	MS1153	T7
1097802	SVJBR2020K16	20	20	25,0	125	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1097803	SVJBR2525M16	25	25	32,0	150	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1244992	SVJBR3225P16	32	25	32,0	170	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
left hand												
1097945	SVJBL1212N11	12	12	16,0	160	22,0	VB..110304	—	—	—	MS1153	T7
1097946	SVJBL1616H11	16	16	20,0	100	22,0	VB..110304	—	—	—	MS1153	T7
1244957	SVJBL1616H16	16	16	20,0	100	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1252234	SVJBL2020K11	20	20	25,0	125	26,0	VB..110304	—	—	—	MS1153	T7
1097947	SVJBL2020K16	20	20	25,0	125	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1097948	SVJBL2525M16	25	25	32,0	150	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1192560	SVJBL3225P16	32	25	32,0	170	35,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15

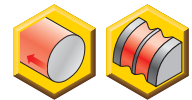
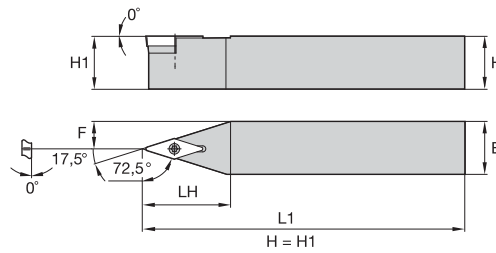
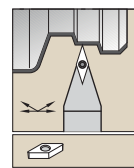
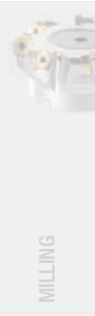




■ SVJB-F 93°



order number	catalogue number	H	B	F	L1	LH	gage insert	insert screw	Torx
right hand									
1097797	SVJBRF1010M11Q	10	10	10,0	150	23,0	VB..110304	MS1153	T7
1097798	SVJBRF1212M11Q	12	12	12,0	150	23,0	VB..110304	MS1153	T7
1097799	SVJBRF1616K16Q	16	16	16,0	125	31,0	VB..160408	MS1155	T15

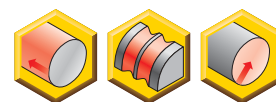
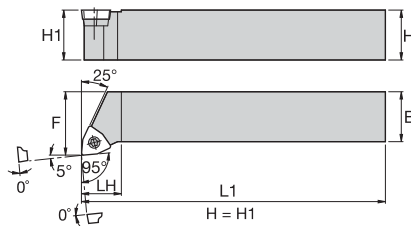
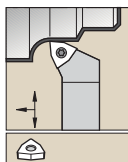


■ SVVB 72,5°



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
1097990	SVB1212N11	12	12	6,0	160	26,0	VB..110304	—	—	—	MS1153	T7
1244961	SVB1616H16	16	16	8,0	100	33,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15
1244962	SVB2020K11	20	20	10,0	125	26,0	VB..110304	—	—	—	MS1153	T7
1097992	SVB2020K16	20	20	10,0	125	33,0	VB..160408	SKVN343	SRS3	3.5 mm	MS1156	T15



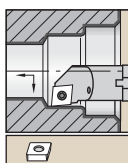


■ SWLC 95°

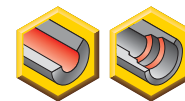
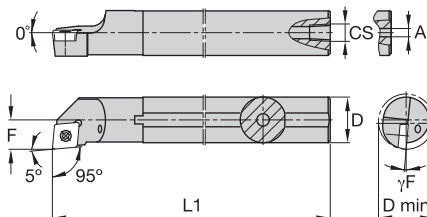


order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	hex	insert screw	Torx
right hand												
1097732	SWLCR2020K06	20	20	25,0	125	16,0	WC..06T308	SKWP343	SRS3	3.5 mm	MS1156	T15

Boring Bars for Positive Inserts



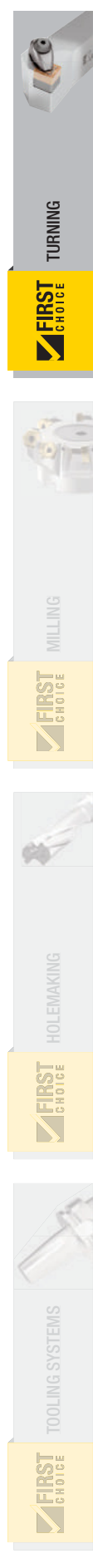
Steel shank with through coolant.

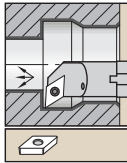


■ A-SCLC 95°

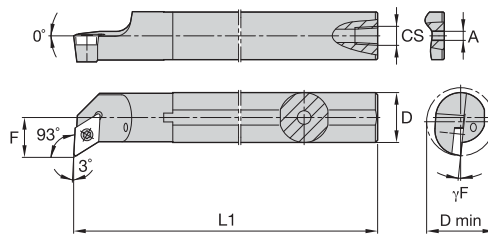


order number	catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1098168	A10KSCLCR06	10	13,0	7,0	125	3,2	—	-7.0	CC..060204	MS1153	T7
1098178	A12MSCLCR06	12	16,0	9,0	150	4,0	1/16-27 NPT	-6.0	CC..060204	MS1153	T7
1098225	A16RSCLCR09	16	20,0	11,0	200	4,0	1/8-27 NPT	-7.0	CC..09T308	MS1155	T15
1098239	A20SSCLCR09	20	25,0	13,0	250	4,0	1/8-27 NPT	-5.0	CC..09T308	MS1155	T15
left hand											
1098173	A10KSCLCL06	10	13,0	7,0	125	3,2	—	-7.0	CC..060204	MS1153	T7
1098183	A12MSCLCL06	12	16,0	9,0	150	4,0	1/16-27 NPT	-6.0	CC..060204	MS1153	T7
1098231	A16RSCLCL09	16	20,0	11,0	200	4,0	1/8-27 NPT	-7.0	CC..09T308	MS1155	T15
1098244	A20SSCLCL09	20	25,0	13,0	250	4,0	1/8-27 NPT	-5.0	CC..09T308	MS1155	T15





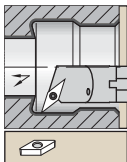
Steel shank with through coolant.



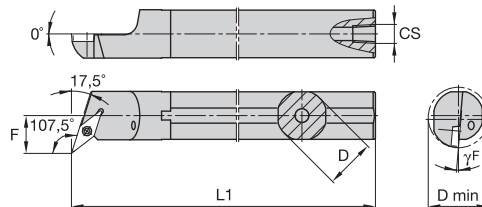
A-SDUC 93°



order number	catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1886506	A10KSDUCR07	10	13,0	7,0	125	3,2	—	-7.0	DC..070204	MS1153	T7
1098187	A12MSDUCR07	12	16,0	9,0	150	—	1/16-27 NPT	-4.0	DC..070204	MS1153	T7
1098197	A16RSDUCR07	16	20,0	11,0	200	—	1/8-27 NPT	-4.0	DC..070204	MS1153	T7
1886508	A16RSDUCR11	16	20,0	11,0	200	—	1/8-27 NPT	-6.0	DC..11T308	MS1155	T15
1098146	A20SSDUCR11	20	25,0	13,0	250	—	1/8-27 NPT	-5.0	DC..11T308	MS1155	T15
left hand											
1886505	A10KSDUCL07	10	13,0	7,0	125	3,2	—	-7.0	DC..070204	MS1153	T7
1098192	A12MSDUCL07	12	16,0	9,0	150	—	1/16-27 NPT	-4.0	DC..070204	MS1153	T7
1098202	A16RSDUCL07	16	20,0	11,0	200	—	1/8-27 NPT	-4.0	DC..070204	MS1153	T7
1886507	A16RSDUCL11	16	20,0	11,0	200	—	1/8-27 NPT	-6.0	DC..11T308	MS1155	T15
1098148	A20SSDUCL11	20	25,0	13,0	250	—	1/8-27 NPT	-5.0	DC..11T308	MS1155	T15



Steel shank with through coolant.

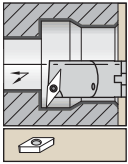


A-SVQB 107,5°

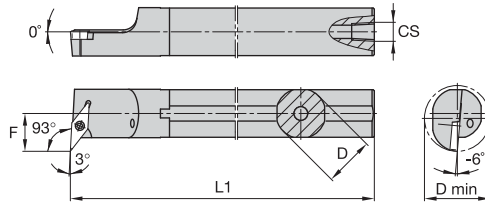


order number	catalogue number	D	D min	F	L1	CS	γF°	gage insert	insert screw	Torx
right hand										
1098232	A16RSVQBR11	16	20,0	11,0	200	1/8-27 NPT	-7.0	VB..110304	MS1153	T7
left hand										
1098233	A16RSVQBL11	16	20,0	11,0	200	1/8-27 NPT	-7.0	VB..110304	MS1153	T7





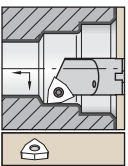
Steel shank with through coolant.



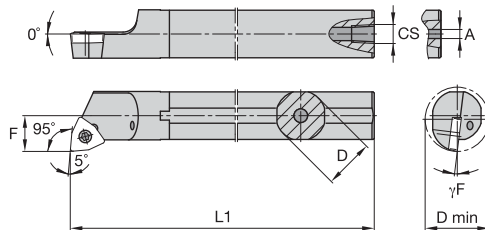
■ A-SVUB 93°



order number	catalogue number	D	D min	F	L1	CS	gage insert	insert screw	Torx
right hand									
1098249	A20SSVUBR11	20	25,0	13,0	250	1/8-27 NPT	VB..110304	MS1153	T7
1098275	A25TSVUBR16	25	32,0	17,0	300	1/4-18 NPT	VB..160408	MS1155	T15
left hand									
1098254	A20SSVUBL11	20	25,0	13,0	250	1/8-27 NPT	VB..110304	MS1153	T7
1098278	A25TSVUBL16	25	32,0	17,0	300	1/4-18 NPT	VB..160408	MS1155	T15



Steel shank with through coolant.

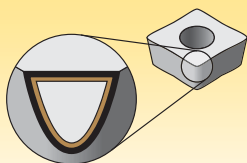


■ A-SWLC 95°



order number	catalogue number	D	D min	F	L1	A	CS	γF°	gage insert	insert screw	Torx
right hand											
1098062	A10KSWLCR04	10	13,0	7,0	125	3,0	—	-7.0	WC..040204	MS1153	T7
1098063	A12MSWLCR04	12	16,0	9,0	150	—	1/16-27 NPT	-6.0	WC..040204	MS1153	T7
1098064	A16RSWLCR06	16	20,0	11,0	200	4,0	1/8-27 NPT	-7.0	WC..06T308	MS1155	T15
1098065	A20SSWLCR06	20	25,0	13,0	250	4,0	1/8-27 NPT	-5.0	WC..06T308	MS1155	T15





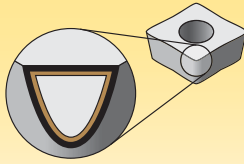
Coatings provide high-speed capability and are engineered for finishing to light roughing.

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

wear resistance ← → toughness

Coating		Grade Description		05	10	15	20	25	30	35	40	45		
PVD-Coated Carbide Grades	 KCU10 -	<p>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.</p> <p>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 high-temp alloys with improved edge toughness, notch resistance, and higher cutting speed/feed capability.</p> <p>beyond</p>	P											
			M											
			K											
			N											
			S											
			H											
PVD-Coated Carbide Grades	 KCU25 -	<p>Composition: An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities.</p> <p>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 cuts and high feed rates.</p> <p>beyond</p>	P											
			M											
			K											
			N											
			S											
			H											
PVD-Coated Carbide Grades	 KC5410 -	<p>Composition: A PVD TiB₂ coating over a very deformation-resistant unalloyed substrate.</p> <p>Application: Designed for roughing, semi-finishing, and finishing of free machining (hypoeutectic <12.2% Si) aluminium, aluminium alloys, and magnesium alloys. The TiB₂ coating is harder than TiN and TiAlN coatings and has an extremely smooth surface, resulting in reduced surface friction, speedy chip flow, and outstanding wear resistance. Built-up edge is prevented because this coating has a very low affinity for aluminium. The substrate is unalloyed and fine grained and offers sharp edges, smooth surfaces, and excellent thermal deformation resistance and edge integrity. Inserts with a ground periphery are polished before coating and have a sharp edge. Moulded inserts have a light hone.</p>	P											
			M											
			K											
			N											
			S											
			H											
CVD-Coated Carbide Grades	 KCP10B -	<p>Composition: A specially engineered cobalt-enriched carbide grade with thick MTCVD TiCN-Al₂O₃-TiOCN coating for maximum wear resistance.</p> <p>Application: An excellent finishing to medium machining grade for a variety of workpiece materials, including most steels, ferritic, martensitic, and PH stainless steels, and cast irons. The cobalt-enriched substrate offers a balanced combination of deformation resistance and edge toughness, while the thick coating layers offer outstanding abrasion resistance and crater wear resistance for high-speed machining. Smooth coating provides resistance to edge build-up and microchipping and produces excellent surface finishes.</p> <p>beyond DRIVE™</p>	P											
			M											
			K											
			N											
			S											
			H											
CVD-Coated Carbide Grades	 KCP25B -	<p>Composition: A tough cobalt-enriched carbide grade with a multilayer MTCVD TiCN-Al₂O₃-TiOCN coating with superior interlayer adhesion.</p> <p>Application: Best general-purpose turning grade for most steels and ferritic and martensitic stainless steels. The substrate design ensures adequate deformation resistance with excellent insert edge strength. Coating layers offer good wear resistance over a wide range of machining conditions and the post-coat treatment minimises microchipping and improves coating adhesion to substrate leading to long tool life and improved workpiece finishes.</p> <p>beyond DRIVE™</p>	P											
			M											
			K											
			N											
			S											
			H											
CVD-Coated Carbide Grades	 KCP40B -	<p>Composition: A tough carbide grade with a thin MTCVD TiCN-Al₂O₃-TiOCN coating.</p> <p>Application: For heavy roughing of carbon, alloy, and stainless steels. The substrate-coating combination provides unbelievable toughness and operational security allowing high metal removal rates even in most demanding interrupted cuts.</p> <p>beyond DRIVE™</p>	P											
			M											
			K											
			N											
			S											
			H											





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

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

wear resistance ← → toughness

CVD-Coated Carbide Grades

Coating		Grade Description		05	10	15	20	25	30	35	40	45
KCK05		<p>Composition: A multilayered coating with moderately thick MTCVD TiCN-Al₂O₃ layers over a highly deformation-resistant carbide substrate.</p> <p>Application: Designed for high-speed machining of grey and ductile irons. The substrate and coating architecture together with post-coat treatment ensure a tremendous tool life advantage, especially when cutting higher tensile strength ductile and grey irons where workpiece size consistency and reliability of tool life are critical. Excellent both in continuous cuts and varied depths of cut.</p>	P									
	-		K									
			beyond									
KCK15		<p>Composition: A multilayered coating with thick MTCVD TiCN-Al₂O₃ layers applied over a carbide substrate specifically engineered for cast irons.</p> <p>Application: Delivers consistent performance in high-speed machining of grey and ductile irons. The substrate design permits the insert to stay in the cut for a long time at high speeds with minimum deformation. The thick CVD coating and post-coat treatment provide superior wear resistance ensuring long and consistent tool life. Can be applied both in continuous and lightly interrupted cuts.</p>	P									
	-		K									
			beyond									
KCK20		<p>Composition: A specially toughened MTCVD TiCN-Al₂O₃ coating over a wear-resistant substrate.</p> <p>Application: Specifically engineered to maximise coating adhesion and edge strength making this grade ideal in wet interrupted cutting of grey and ductile irons. It can be used in a wide range of applications from finishing to roughing to maximise productivity wherever strength and reliability are needed.</p>	P									
	-		K									
			beyond									
KCM15B		<p>Composition: A multilayer MTCVD TiCN-Al₂O₃ coated carbide grade.</p> <p>Application: An excellent finishing to medium machining grade for austenitic stainless steels at higher speeds and covers a broad range of steel applications in the P20–P25 range. KCM15B grade in combination with unique geometries have been designed to resist depth-of-cut notching and minimise bur formation. The post-coat treatment reduces coating stresses, improves coating adhesion, minimises microchipping and edge build-up, and improves workpiece finish.</p>	P									
	-		M									
			beyond DRIVE™									
KCM25B		<p>Composition: A multilayer MTCVD TiCN-Al₂O₃-TiCN coated carbide grade.</p> <p>Application: This CVD-coated grade is designed for general-purpose machining of austenitic stainless steels at moderate speeds and feeds. This grade offers an extraordinary combination of toughness, built-up edge resistance, and wear resistance in stainless steel applications.</p>	P									
	-		M									
			beyond DRIVE™									
KBH20		<p>Composition: A low content PcBN grade with a PVD TiN/AlTiN coating for added wear resistance.</p> <p>Application: KBH20™ is the ideal PcBN hard turning grade for continuous to lightly interrupted cutting applications. The structure, as well as the different edge preparations, enable repeatable workpiece tolerances, excellent surface finishes, and surface integrity. Typical applications are case-hardened steel components such as gears, shafts, and other drive-train components.</p>										
	-		H									



Getting started made EASY

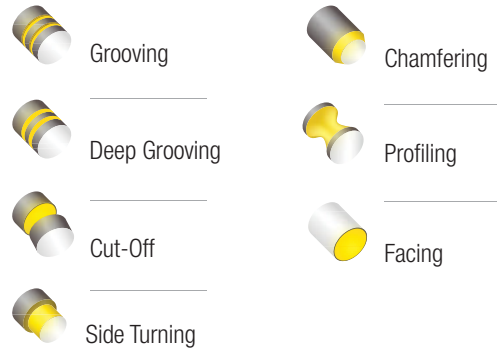
beyond™ EVOLUTION™

Your day made EASY

Choosing the right tooling can be complicated and time-consuming. Built on simplicity, we have engineered a new tool that makes every machine operator's life EASY.

Unwilling to sacrifice performance or applications, Kennametal introduces Beyond™ Evolution™.

Beyond™ Evolution™ is the new single-side grooving and cut-off tool that also performs multi-directional turning.

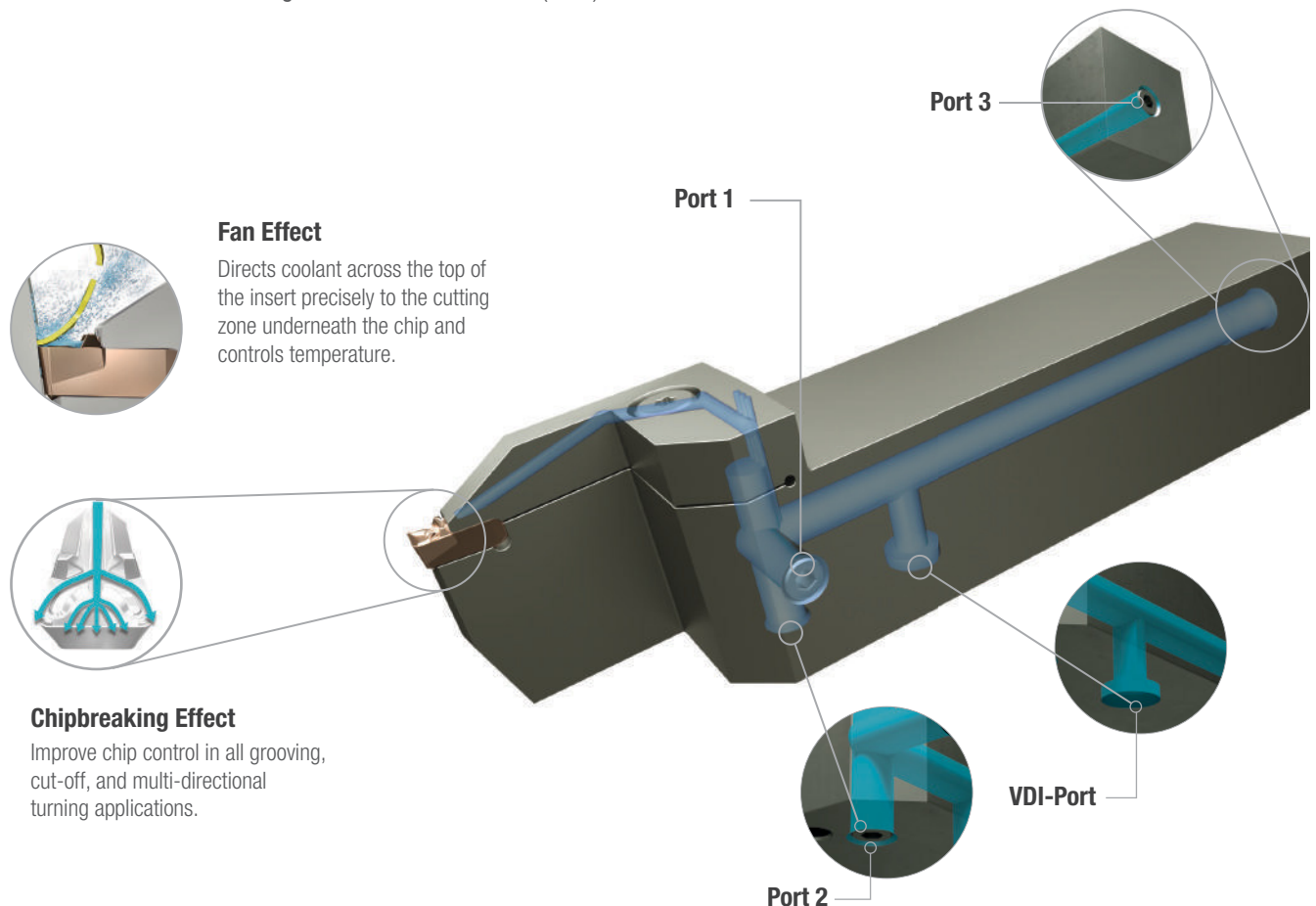


Productivity made EASY

Active Coolant Control

If your coolant delivery is typical to the market, you may be applying more heat to the cutting edge than you think. This reduces tool life and increases cycle time.

With Beyond™ Evolution™, you won't have to change your existing equipment. Whether you are using a high-pressure or low-pressure coolant supply, Beyond™ Evolution™, featuring Active Coolant Control, delivers more tool life and higher Metal Removal Rates (MRR).

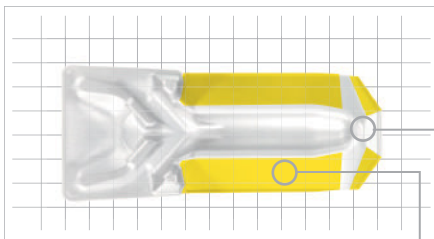


Smooth surface finish made EASY Triple-V Seating

Problem: Traditional single-sided grooving and cut-off systems cannot deliver smooth surface finish due to lack of stability.

Solution: The Beyond™ Evolution™ proprietary new Triple-V Seating feature provides functional stability and minimises vibration.

Three contact surfaces provide unmatched stability: When combined with GUP and CF chipbreakers, Triple-V Seating provides excellent surface finish.

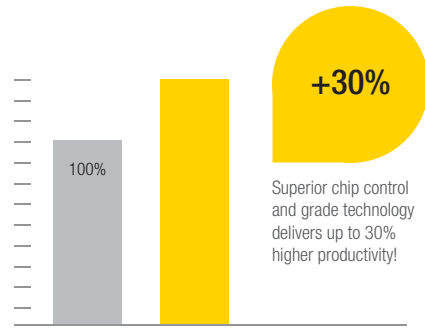
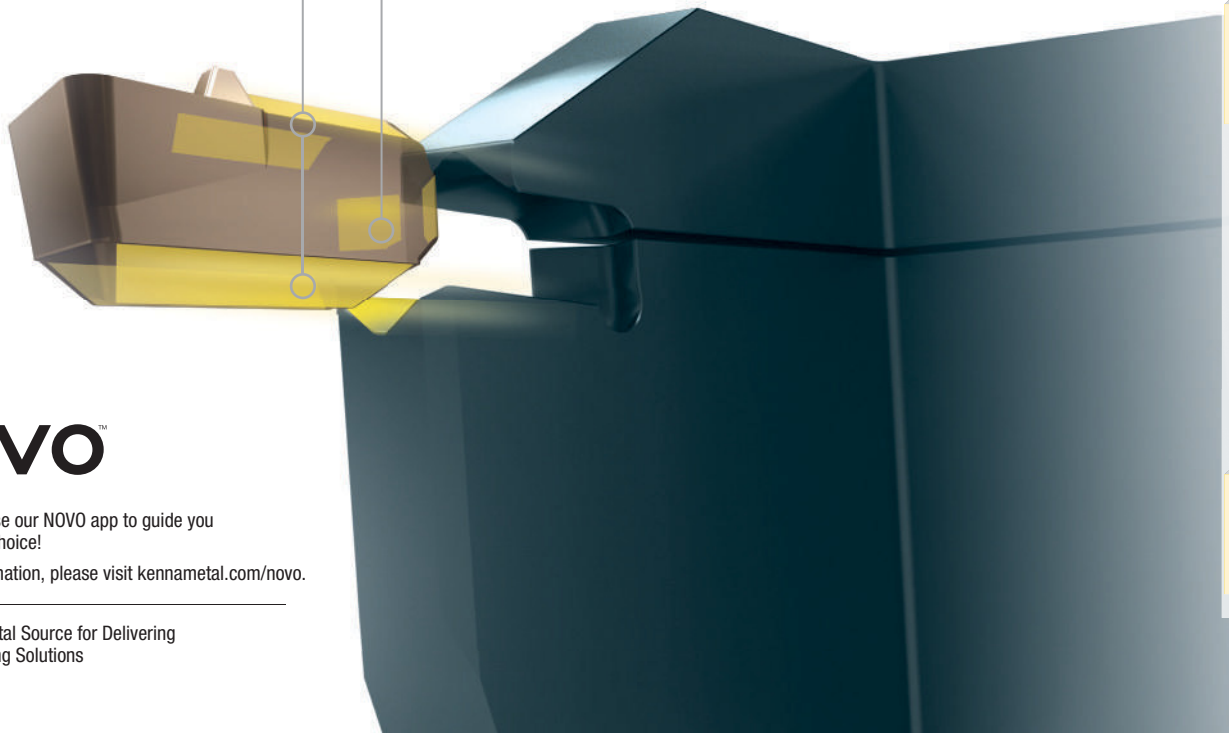


Top and Bottom-V

Precise and secure insert positioning for increased rigidity and dimensional accuracy

V-Back Design

Unsurpassed grooving, cut-off, and multi-directional turning load stability.



Saving money made EASY

Beyond™ Evolution™, featuring Active Coolant Control, Triple-V Seating, and Beyond™ Drive™ grades with Wear Detection Technology, provides longer tool life, maximum stability, and higher Metal Removal Rates (MRR), resulting in up to 30% higher productivity.



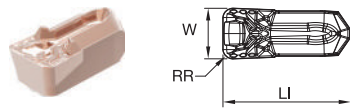
You can also use our NOVO app to guide you to the correct choice!

For more information, please visit kennametal.com/novo.

NOVO: The Digital Source for Delivering Smart Machining Solutions



- Positive chipbreaker lowers cutting forces.
- Engineered geometry for chip control in side turning.
- High performance in all materials.



- first choice
- alternate choice

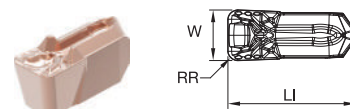
P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

■ GUP Precision Moulded • Metric

ISO catalogue number	SSC	W	W tol ±	RR	LI	KCU10	KCU25
EG0212M02U02GUP	2	2,125	0,050	0,20	8,97	6013031	5532930
EG0251M02U02GUP	2	2,511	0,050	0,20	8,97	6013032	5532931
EG0312M03U02GUP	3	3,125	0,075	0,20	9,60	6013033	5941056
EG0312M03U04GUP	3	3,125	0,075	0,40	9,60	6013034	5941057
EG0412M04U04GUP	4	4,125	0,075	0,40	10,19	6012944	5941071
EG0412M04U08GUP	4	4,125	0,075	0,80	10,19	-	5941083
EG0512M05U04GUP	5	5,125	0,075	0,40	12,25	6012946	5533212
EG0512M05U08GUP	5	5,125	0,075	0,80	12,25	6012947	5533214
EG0612M06U04GUP	6	6,125	0,075	0,40	14,60	6012948	5533120
EG0612M06U08GUP	6	6,125	0,075	0,80	14,60	6012949	5533124
EG0812M08U08GUP	8	8,125	0,075	0,80	17,47	6012961	5532941
EG1012M10U12GUP	10	10,125	0,075	1,20	20,80	6012963	5533220

SSC = To correspond with the SSC on the toolholder.

- Positive chipbreaker lowers cutting forces.
- Engineered geometry for chip control in side turning.
- High performance in all materials.
- More precise widths and better repeatability.



- first choice
- alternate choice

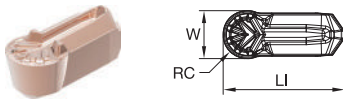
P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

■ GUP Precision Ground • Metric

ISO catalogue number	SSC	W	W tol ±	RR	LI	KCU10	KCU25
EG0200M02P02GUP	2	2,000	0,025	0,20	8,80	6012687	5988771
EG0300M03P02GUP	3	3,000	0,025	0,20	9,40	6012688	5941101
EG0300M03P04GUP	3	3,000	0,025	0,40	9,60	6012689	5941102
EG0400M04P04GUP	4	4,000	0,025	0,40	10,10	6012690	5941103
EG0400M04P08GUP	4	4,000	0,025	0,80	10,10	6012701	5941104
EG0500M05P04GUP	5	5,000	0,025	0,40	12,20	6012702	5988774
EG0500M05P08GUP	5	5,000	0,025	0,80	12,20	6012703	5988775
EG0600M06P04GUP	6	6,000	0,025	0,40	14,50	6012704	5988772
EG0600M06P08GUP	6	6,000	0,025	0,80	14,50	6012705	5988773
EG0700M06P08GUP	6	7,000	0,025	0,80	14,50	6012707	-
EG0800M08P08GUP	8	8,000	0,025	0,80	17,40	6012708	5988777
EG0800M08P12GUP	8	8,000	0,025	1,20	17,40	-	5988778
EG1000M10P12GUP	10	10,000	0,025	1,20	20,70	6012711	-

SSC = To correspond with the SSC on the toolholder.

- First choice in profiling.
- >180° cutting edge.
- High performance in all materials.



■ GUP Full Radius Precision Moulded • Metric

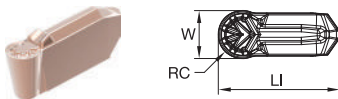
ISO catalogue number	SSC	W	W tol ±	RC	LI	KCU10	KCU25
ER0212M02U00GUP	2	2,120	0,050	1,060	8,97	6231902	6231905
ER0312M03U00GUP	3	3,125	0,075	1,560	9,60	6013037	5534274
ER0412M04U00GUP	4	4,125	0,075	2,060	10,20	6012970	-
ER0512M05U00GUP	5	5,125	0,075	2,560	12,20	-	5534278
ER0612M06U00GUP	6	6,125	0,075	3,060	14,60	-	5534290
ER0812M08U00GUP	8	8,125	0,075	4,060	17,50	6012973	5534292

SSC = To correspond with the SSC on the toolholder.

- first choice
- alternate choice

P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

- First choice in profiling.
- >180° cutting edge.
- High performance in all materials.
- More precise widths and better repeatability.



■ GUP Full Radius Precision Ground • Metric

ISO catalogue number	SSC	W	W tol ±	RC	LI	KCU10	KCU25
ER0200M02P00GUP	2	2,000	0,025	1,000	8,91	6231903	6231906
ER0300M03P00GUP	3	3,000	0,025	1,500	9,50	6012720	5988780
ER0400M04P00GUP	4	4,000	0,025	2,000	10,10	6012721	5988781
ER0500M05P00GUP	5	5,000	0,025	2,500	12,20	6012722	5988782
ER0600M06P00GUP	6	6,000	0,025	3,000	14,50	6012723	5988783
ER0800M08P00GUP	8	8,000	0,025	4,000	17,40	6012724	5988785

SSC = To correspond with the SSC on the toolholder.

- first choice
- alternate choice

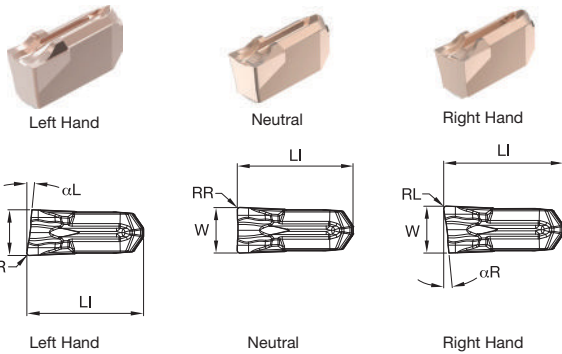
P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	



- Positive chipbreaker lowers cutting forces.
- First choice for steel.
- Excellent surface finish.

- first choice
- alternate choice

P	●
M	○
K	○
N	○
S	○
H	



■ CF Precision Moulded • Metric

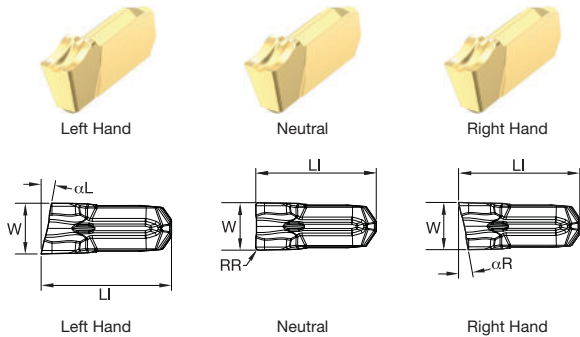
ISO catalogue number	SSC	W	W tol ±	LI	αR	αL	RR	RL	KCU25
EC014M1BL06CF01	1B	1,404	0,050	9,00	—	6	0,15	—	5533516
EC014M1BN00CF01	1B	1,400	0,050	9,00	—	—	0,15	0,15	5533081
EC014M1BR06CF01	1B	1,404	0,050	9,00	6	—	—	0,15	5533517
EC020M02L06CF02	2	2,000	0,050	8,97	—	6	0,20	—	5533150
EC020M02N00CF02	2	2,000	0,050	8,97	—	—	0,20	0,20	5533082
EC020M02R06CF02	2	2,000	0,050	8,97	6	—	—	0,20	5533151
EC030M03L06CF02	3	3,000	0,075	9,60	—	6	0,20	—	5941074
EC030M03N00CF02	3	3,000	0,075	9,60	—	—	0,20	0,20	5941073
EC030M03R06CF02	3	3,000	0,075	9,60	6	—	—	0,20	5941075
EC040M04L06CF02	4	4,000	0,075	10,19	—	6	0,20	—	5941077
EC040M04N00CF02	4	4,000	0,075	10,19	—	—	0,20	0,20	5941076
EC040M04R06CF02	4	4,000	0,075	10,19	6	—	—	0,20	5941078
EC050M05N00CF03	5	5,000	0,075	12,20	—	—	0,30	0,30	5533518

SSC = To correspond with the SSC on the toolholder.

- Positive chipbreaker lowers cutting forces.
- First choice for stainless steel and difficult to cut materials.
- Sharp corners and increased lead angles.
- Increased chip control.

- first choice
- alternate choice

P	●
M	●
K	○
N	○
S	●
H	



■ CF Precision Ground • Metric

catalogue number	SSC	W	W tol ±	LI	αR	αL	RR	KCU25
EC014M1BPL06CF00	1B	1,400	0,025	9,00	—	6	—	6442340
EC014M1BPL12CF00	1B	1,400	0,025	9,00	—	12	—	6442339
EC014M1BPN00CF00	1B	1,400	0,025	9,00	—	—	—	6442471
EC014M1BPR06CF00	1B	1,400	0,025	9,00	6	—	—	6442472
EC014M1BPR12CF00	1B	1,400	0,025	9,00	12	—	—	6442473
EC020M02PL06CF00	2	2,000	0,025	8,95	—	6	—	6442475
EC020M02PL12CF00	2	2,000	0,025	8,95	—	12	—	6442474
EC020M02PN00CF00	2	2,000	0,025	8,94	—	—	—	6442476
EC020M02PN00CF02	2	2,000	0,025	9,04	—	—	0,20	6442488
EC020M02PR06CF00	2	2,000	0,025	8,94	6	—	—	6442477
EC020M02PR12CF00	2	2,000	0,025	8,95	12	—	—	6442479
EC030M03PL06CF00	3	3,000	0,025	9,48	—	6	—	6442480
EC030M03PL12CF00	3	3,000	0,025	9,48	—	12	—	6442337
EC030M03PN00CF00	3	3,000	0,025	9,48	—	—	—	6442481
EC030M03PN00CF02	3	3,000	0,025	9,63	—	—	0,20	6442336
EC030M03PR06CF00	3	3,000	0,025	9,48	6	—	—	6442482
EC030M03PR12CF00	3	3,000	0,025	9,48	12	—	—	6442338
EC040M04PL06CF00	4	4,000	0,025	10,01	—	6	—	6442483
EC040M04PN00CF00	4	4,000	0,025	10,01	—	—	—	6442484
EC040M04PN00CF02	4	4,000	0,025	10,16	—	—	0,20	6442489
EC040M04PR06CF00	4	4,000	0,025	10,01	6	—	—	6442485
EC050M05PN00CF03	5	5,000	0,020	12,22	—	—	0,30	6442502

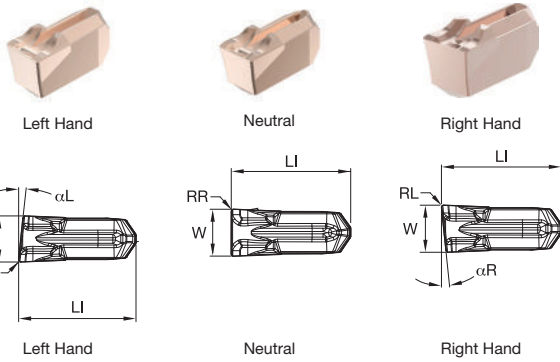
SSC = To correspond with the SSC on the toolholder.



- Ultimate solution in edge stability.
- Leverage for interrupted cuts or hardened skin.
- First choice for cast iron.

● first choice
○ alternate choice

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K	<input checked="" type="radio"/>
N	<input type="radio"/>
S	<input type="radio"/>
H	<input type="radio"/>



■ CM Precision Moulded • Metric

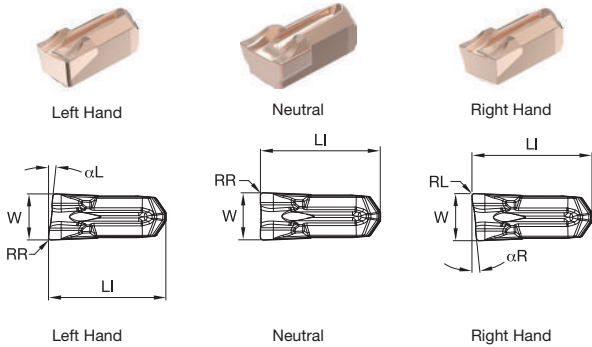
ISO catalogue number	SSC	W	W tol ±	LI	αR	αL	RR	RL	KCU25
EC014M1BL06CM02	1B	1,400	0,050	9,00	—	6	0,20	0,20	5533519
EC014M1BN00CM01	1B	1,400	0,050	9,00	—	—	0,15	0,15	5533089
EC014M1BR06CM02	1B	1,400	0,050	9,02	6	—	—	0,20	5533520
EC020M02N00CM02	2	2,000	0,050	8,98	—	—	0,20	0,20	5533090
EC020M02R06CM02	2	2,000	0,050	9,00	6	—	—	0,20	5533522
EC030M03L06CM02	3	3,000	0,075	9,60	—	6	0,20	—	5941085
EC030M03N00CM02	3	3,000	0,075	9,60	—	—	0,20	0,20	5941079
EC030M03R06CM02	3	3,000	0,075	9,60	6	—	—	0,20	5941086
EC040M04L06CM02	4	4,000	0,075	10,20	—	6	0,20	—	5941087
EC040M04N00CM02	4	4,000	0,075	10,20	—	—	0,20	0,20	5941080
EC040M04R06CM02	4	4,000	0,075	10,20	6	—	—	0,20	5941088
EC050M05N00CM03	5	5,000	0,075	12,20	—	—	0,30	0,30	5533523
EC060M06N00CM03	6	6,000	0,075	14,59	—	—	0,30	0,30	5533093
EC080M08N00CM04	8	8,000	0,075	17,50	—	—	0,40	0,40	5533525

SSC = To correspond with the SSC on the toolholder.

- Strong chip control due to concave edge.
- First choice in steel when additional stability is required.
- Can apply most aggressive feed rates.

- first choice
- alternate choice

P	●
M	●
K	○
N	○
S	●
H	



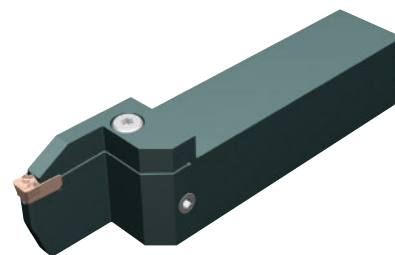
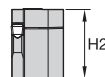
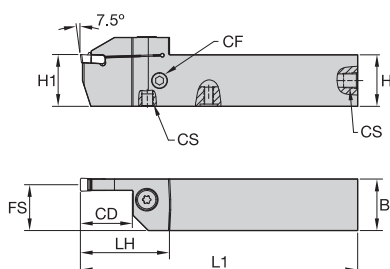
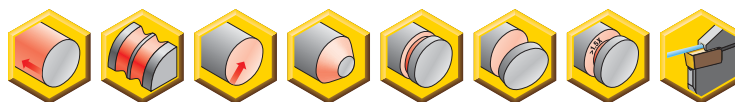
■ CR Precision Moulded • Metric

ISO catalogue number	SSC	W	W tol ±	LI	αR	αL	RR	RL	KCU25
EC020M02L06CR02	2	2,000	0,050	9,00	—	6	0,20	—	5533528
EC020M02N00CR02	2	2,000	0,050	8,98	—	—	0,20	0,20	5533156
EC020M02R06CR02	2	2,000	0,050	9,00	6	—	—	0,20	5533529
EC030M03L06CR02	3	3,000	0,075	9,60	—	6	0,20	—	5941089
EC030M03N00CR02	3	3,000	0,075	9,60	—	—	0,20	0,20	5941081
EC030M03R06CR02	3	3,000	0,075	9,60	6	—	—	0,20	5941090
EC040M04L06CR02	4	4,000	0,075	10,20	—	6	0,20	—	5941091
EC040M04N00CR02	4	4,000	0,075	10,20	—	—	0,20	0,20	5941082
EC040M04R06CR02	4	4,000	0,075	10,20	6	—	—	0,20	5941092
EC050M05N00CR03	5	5,000	0,075	12,25	—	—	0,30	0,30	5533526
EC060M06N00CR03	6	6,000	0,075	14,59	—	—	0,30	0,30	5533096
EC070M06N00CR04	6	7,000	0,075	14,60	—	—	0,40	0,40	5533527

SSC = To correspond with the SSC on the toolholder.



- Offers the greatest stability.
- Straight clearance for unlimited workpiece diameters.
- Through the pocket coolant capable.





■ Integral Straight • Metric

order number	catalogue number	SSC	CD	H1	H	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
right hand															
5953960	EVSMR2020K0216	2	16	20	20	20	27	125	19	31	—	—	—	MS1160	T20
5953958	EVSMR2525M0216	2	16	25	25	25	32	150	24	31	—	—	—	MS1160	T20
5953959	EVSMR2020K0222	2	22	20	20	20	29	125	19	38	—	—	MS2091	—	25 IP
5953957	EVSMR2525M0226	2	26	25	25	25	34	150	24	42	—	—	MS2091	—	25 IP
5939452	EVSMR2020K0316C	3	16	20	20	20	29	125	19	37	M8X1	M8X1	MS1595	—	T30
5939448	EVSMR2525M0316C	3	16	25	25	25	34	150	24	37	G1/8-28	G1/8-28	MS1595	—	T30
5939451	EVSMR2020K0322C	3	22	20	20	20	30	125	19	43	M8X1	M8X1	MS1595	—	T30
5939447	EVSMR2525M0326C	3	26	25	25	25	35	150	24	47	G1/8	G1/8	MS1595	—	T30
5939450	EVSMR2020K0416C	4	16	20	20	20	29	125	18	37	M8X1	M8X1	MS1595	—	T30
5939446	EVSMR2525M0416C	4	16	25	25	25	34	150	23	37	G1/8	G1/8	MS1595	—	T30
5939449	EVSMR2020K0422C	4	22	20	20	20	30	125	18	43	M8X1	M8X1	MS1595	—	T30
5939445	EVSMR2525M0426C	4	26	25	25	25	35	150	23	47	G1/8	G1/8	MS1595	—	T30
5939444	EVSMR3232P0426C	4	26	32	32	32	42	170	30	47	G1/8	G1/8	MS1970	—	T30
5939443	EVSMR3232P0432C	4	32	32	32	32	42	170	30	53	G1/8	G1/8	MS1970	—	T30
5954258	EVSMR2020K0516C	5	16	20	20	20	29	125	18	37	M8X1	M8X1	MS1595	—	T30
5954254	EVSMR2525M0516C	5	16	25	25	25	34	150	23	37	G1/8-28	G1/8-28	MS1970	—	T30
5954253	EVSMR2525M0526C	5	26	25	25	25	35	150	23	47	G1/8-28	G1/8-28	MS1970	—	T30
5954249	EVSMR3232P0526C	5	26	32	32	32	42	170	30	47	G1/8-28	G1/8-28	MS1970	—	T30
5954248	EVSMR3232P0532C	5	32	32	32	32	42	170	30	53	G1/8-28	G1/8-28	MS1970	—	T30
5954256	EVSMR2020K0616C	6	16	20	20	20	29	125	17	37	M8X1	M8X1	MS1595	—	T30
5954252	EVSMR2525M0616C	6	16	25	25	25	34	150	25	37	G1/8-28	G1/8-28	MS1970	—	T30
5954251	EVSMR2525M0626C	6	26	25	25	25	34	150	25	47	G1/8-28	G1/8-28	MS1970	—	T30
5954247	EVSMR3232P0626C	6	26	32	32	32	42	170	32	47	G1/8-28	G1/8-28	MS1970	—	T30
5954246	EVSMR3232P0632C	6	32	32	32	32	43	170	29	55	G1/8-28	G1/8-28	MS1490	—	T45
5954250	EVSMR2525M0826C	8	26	25	25	25	35	150	21	49	G1/8-28	G1/8-28	MS1490	—	T45
5954244	EVSMR3232P0832C	8	32	32	32	32	43	170	28	55	G1/8-28	G1/8-28	MS1490	—	T45

(continued)

(Integral Straight • Metric — continued)

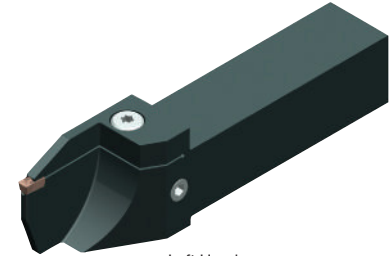
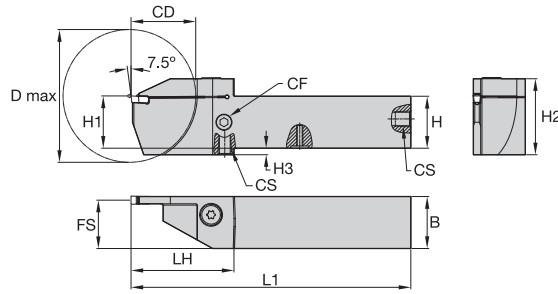
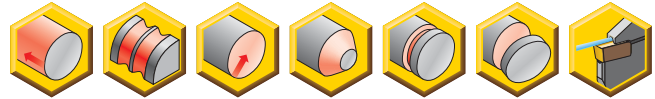
order number	catalogue number	SSC	CD	H1	H	B	H2	L1	FS	LH	CF	CS			Torx
													Torx clamp screw	Torx clamp screw	
left hand															
5953956	EVSML2020K0216	2	16	20	20	20	27	125	19	31	—	—	—	MS1160	T20
5953954	EVSML2525M0216	2	16	25	25	25	32	150	24	31	—	—	—	MS1160	T20
5953955	EVSML2020K0222	2	22	20	20	20	29	125	19	38	—	—	MS2091	—	25 IP
5953953	EVSML2525M0226	2	26	25	25	25	34	150	24	42	—	—	MS2091	—	25 IP
5939442	EVSML2020K0316C	3	16	20	20	20	29	125	19	37	M8X1	M8X1	MS1595	—	T30
5939438	EVSML2525M0316C	3	16	25	25	25	34	150	24	37	G1/8-28	G1/8-28	MS1595	—	T30
5939441	EVSML2020K0322C	3	22	20	20	20	30	125	19	43	M8X1	M8X1	MS1595	—	T30
5939437	EVSML2525M0326C	3	26	25	25	25	35	150	24	47	G1/8-28	G1/8-28	MS1595	—	T30
5939440	EVSML2020K0416C	4	16	20	20	20	29	125	18	37	M8X1	M8X1	MS1595	—	T30
5939436	EVSML2525M0416C	4	16	25	25	25	34	150	23	37	G1/8	G1/8	MS1595	—	T30
5939439	EVSML2020K0422C	4	22	20	20	20	30	125	18	43	M8X1	M8X1	MS1595	—	T30
5939435	EVSML2525M0426C	4	26	25	25	25	35	150	23	47	G1/8	G1/8	MS1595	—	T30
5939433	EVSML3232P0426C	4	26	32	32	32	42	170	30	47	G1/8	G1/8	MS1970	—	T30
5939432	EVSML3232P0432C	4	32	32	32	32	42	170	30	53	G1/8	G1/8	MS1970	—	T30
5954235	EVSML2525M0516C	5	16	25	25	25	34	150	23	37	G1/8-28	G1/8-28	MS1970	—	T30
5954234	EVSML2525M0526C	5	26	25	25	25	35	150	23	47	G1/8-28	G1/8-28	MS1970	—	T30
5954220	EVSML3232P0526C	5	26	32	32	32	42	170	30	47	G1/8-28	G1/8-28	MS1970	—	T30
5954219	EVSML3232P0532C	5	32	32	32	32	42	170	30	53	G1/8-28	G1/8-28	MS1970	—	T30
5954218	EVSML3232P0626C	6	26	32	32	32	42	170	29	47	G1/8-28	G1/8-28	MS1970	—	T30
5954217	EVSML3232P0632C	6	32	32	32	32	43	170	29	55	G1/8-28	G1/8-28	MS1490	—	T45
5954231	EVSML2525M0826C	8	26	25	25	25	35	150	21	49	G1/8-28	G1/8-28	MS1490	—	T45
5954214	EVSML3232P1032C	10	32	32	32	32	43	170	28	55	G1/8-28	G1/8-28	MS1490	—	T45

SSC = To correspond with the SSC on the insert.

screw catalogue number	screw order number	torque		thread	socket	wrench catalogue number	wrench order number
		Nm	in. lbs.				
MS1160	1099645	7	62	M5	T20	KT20	1022703
MS1162	1127019	9	80	M6	T25	KT25	1022725
MS1163	1124104	18	159	M8	T30	KT30L	3782185
MS1273	1020977	4	35	M4	T15	KT15	1022701
MS1490	2263299	17	151	M8	T45	KT45	1018227
MS1595	1094300	12	106	M6	T30	KT30	1099676
MS1970	1106668	12	106	M6	T30	KT30	1099676
MS2002	1621087	9	80	M6	T25	KT25	1022725
MS2091	1931147	9	80	M5	25IP	K25IP	2050113
191.916	1132523	5	44	M4	T15	KT15	1022701
MS1944	1732924	4	35	M4	T25	KT25	1022725



- Through the pocket coolant capable.
- Reinforced for added support in specific workpiece diameters.





CD = Maximum cut-off depth for solid bars.
D max = Maximum bar diameter for deep grooving or cut-off of tubes.

■ Integral Reinforced Straight Top Clamp • Metric

order number	catalogue number	SSC	CD	D max	H1	H	B	H2	H3	L1	FS	LH	CF	CS	Torx clamp screw	Torx clamp screw	Torx
right hand																	
6179757	EVSCTR1212K1B16	1B	16	42	12	12	12	23	4	125	11	31	—	—	—	MS1160	T20
6179759	EVSCTR1212K0216	2	16	42	12	12	12	23	4	125	11	31	—	—	—	MS1160	T20
5980139	EVSCTR1616K0216	2	16	42	16	16	16	23	—	125	15	31	—	—	—	MS1160	T20
5980762	EVSCTR2020K0216	2	16	42	20	20	20	27	—	125	19	31	—	—	—	MS1160	T20
5980767	EVSCTR2525M0216	2	16	42	25	25	25	32	—	150	24	31	—	—	—	MS1160	T20
5980768	EVSCTR2525M0226	2	26	62	25	25	25	34	—	150	24	42	—	—	MS2091	—	25 IP
6179755	EVSCTR1212K0316C	3	16	52	12	12	12	23	4	125	11	33	M8X1	M8X1	MS1944	—	T25
5980140	EVSCTR1616K0316C	3	16	52	16	16	16	24	—	125	15	35	M8X1	M8X1	MS2091	—	25 IP
5980763	EVSCTR2020K0316C	3	16	52	20	20	20	29	—	125	19	37	M8X1	M8X1	MS1595	—	T30
5980138	EVSCTR2525M0316C	3	16	62	25	25	25	34	—	150	24	37	G1/8-28	G1/8-28	MS1595	—	T30
5980764	EVSCTR2020K0326C	3	26	62	20	20	20	34	4	125	19	47	M8X1	M8X1	MS1595	—	T30
5980769	EVSCTR2525M0326C	3	26	62	25	25	25	35	—	150	24	47	G1/8-28	G1/8-28	MS1595	—	T30
5980761	EVSCTR1616K0416C	4	16	52	16	16	16	24	—	125	14	35	M8X1	M8X1	MS2091	—	25 IP
5980765	EVSCTR2020K0416C	4	16	52	20	20	20	29	—	125	18	37	M8X1	M8X1	MS1595	—	T30
5980766	EVSCTR2020K0426C	4	26	62	20	20	20	34	4	125	18	47	M8X1	M8X1	MS1595	—	T30
5980770	EVSCTR2525M0426C	4	26	62	25	25	25	35	—	150	23	47	G1/8-28	G1/8-28	MS1595	—	T30
5980771	EVSCTR2525M0432C	4	32	64	25	25	25	39	4	150	23	53	G1/8-28	G1/8-28	MS1595	—	T30
5980772	EVSCTR2525M0526C	5	26	62	25	25	25	35	—	150	23	47	G1/8-28	G1/8-28	MS1970	—	T30
5980775	EVSCTR3232P0540C	5	40	82	32	32	32	47	4	170	30	63	G1/8-28	G1/8-28	MS1490	—	T45

(continued)

(Integral Reinforced Straight Top Clamp • Metric – continued)

order number	catalogue number	SSC	CD	D max	H1	H	B	H2	H3	L1	FS	LH	CF	CS			Torx
															Torx clamp screw	Torx clamp screw	
left hand																	
6179760	EVSCTL1212K1B16	1B	16	42	12	12	12	23	4	125	11	31	—	—	—	MS1160	T20
6179762	EVSCTL1212K0216	2	16	42	12	12	12	23	4	125	11	31	—	—	—	MS1160	T20
5980777	EVSCTL1616K0216	2	16	42	16	16	16	23	—	125	15	31	—	—	—	MS1160	T20
5980780	EVSCTL2020K0216	2	16	42	20	20	20	27	—	125	19	31	—	—	—	MS1160	T20
5980806	EVSCTL2525M0226	2	26	62	25	25	25	34	—	150	24	42	—	—	MS2091	—	25 IP
6179756	EVSCTL1212K0316C	3	16	52	12	12	12	23	4	125	11	33	M8X1	M8X1	MS1944	—	T25
5980778	EVSCTL1616K0316C	3	16	52	16	16	16	24	—	125	15	35	M8X1	M8X1	MS2091	—	25 IP
5980801	EVSCTL2020K0316C	3	16	52	20	20	20	29	—	125	19	37	M8X1	M8X1	MS1595	—	T30
5980776	EVSCTL2525M0316C	3	16	62	25	25	25	34	—	150	24	37	G1/8-28	G1/8-28	MS1595	—	T30
5980802	EVSCTL2020K0326C	3	26	62	20	20	20	34	4	125	19	47	M8X1	M8X1	MS1595	—	T30
5980807	EVSCTL2525M0326C	3	26	62	25	25	25	35	—	150	24	47	G1/8-28	G1/8-28	MS1595	—	T30
5980803	EVSCTL2020K0416C	4	16	52	20	20	20	29	—	125	18	37	M8X1	M8X1	MS1595	—	T30
5980804	EVSCTL2020K0426C	4	26	62	20	20	20	34	4	125	18	47	M8X1	M8X1	MS1595	—	T30
5980808	EVSCTL2525M0426C	4	26	62	25	25	25	35	—	150	23	47	G1/8-28	G1/8-28	MS1595	—	T30
5980809	EVSCTL2525M0432C	4	32	64	25	25	25	39	4	150	23	53	G1/8-28	G1/8-28	MS1595	—	T30
5980810	EVSCTL2525M0526C	5	26	62	25	25	25	35	—	150	23	47	G1/8-28	G1/8-28	MS1970	—	T30

NOTE: Through the pocket coolant available in seat sizes 3 and higher.
SSC = To correspond with the SSC on the insert.

screw catalogue number	screw order number	torque		thread	socket	wrench catalogue number	wrench order number
		Nm	in. lbs.				
MS1160	1099645	7	62	M5	T20	KT20	1022703
MS1162	1127019	9	80	M6	T25	KT25	1022725
MS1163	1124104	18	159	M8	T30	KT30L	3782185
MS1273	1020977	4	35	M4	T15	KT15	1022701
MS1490	2263299	17	151	M8	T45	KT45	1018227
MS1595	1094300	12	106	M6	T30	KT30	1099676
MS1970	1106668	12	106	M6	T30	KT30	1099676
MS2002	1621087	9	80	M6	T25	KT25	1022725
MS2091	1931147	9	80	M5	25IP	K25IP	2050113
191.916	1132523	5	44	M4	T15	KT15	1022701
MS1944	1732924	4	35	M4	T25	KT25	1022725

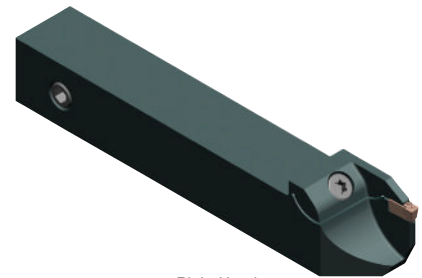
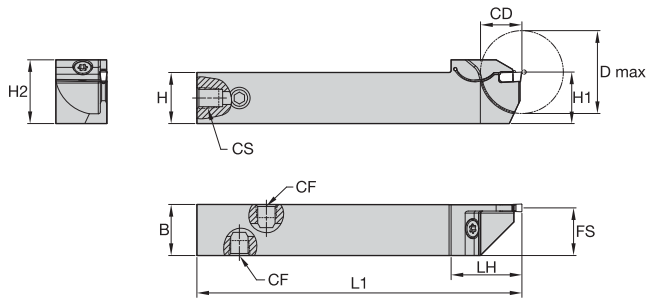
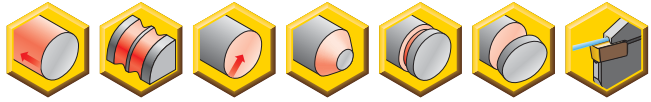


TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE



Right Hand

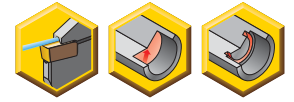
CD = Maximum cut-off depth for solid bars.
D max = Maximum bar diameter for deep grooving or cut-off of tubes.

Integral Reinforced Front Clamp • Metric

order number	catalogue number	SSC	CD	D max	H1	H	B	H2	L1	FS	LH	CF	CS	Torx clamp screw	Torx
right hand															
6179766	EVSCFR1212K1B10	1B	10	20	12	12	12	16	125	11	21	—	—	191.916	T15
6179767	EVSCFR1212K1B13	1B	13	26	12	12	12	16	125	11	24	—	—	191.916	T15
6179774	EVSCFR1616K1B16	1B	16	32	16	16	16	21	125	15	27	—	—	MS1160	T20
6179778	EVSCFR2020K1B16	1B	16	32	20	20	20	25	125	19	27	—	—	MS1160	T20
6179770	EVSCFR1212K0210	2	10	20	12	12	12	16	125	11	21	—	—	191.916	T15
6179771	EVSCFR1212K0216	2	16	32	12	12	12	16	125	11	27	—	—	191.916	T15
6179776	EVSCFR1616K0216	2	16	32	16	16	16	21	125	15	27	—	—	MS1160	T20
6179780	EVSCFR2020K0216	2	16	32	20	20	20	25	125	19	27	—	—	MS1160	T20
6179772	EVSCFR1212K0310C	3	10	20	12	12	12	17	125	11	22	M8X1	M8X1	191.916	T15
6179773	EVSCFR1212K0316C	3	16	32	12	12	12	17	125	11	28	M8X1	M8X1	191.916	T15
6179777	EVSCFR1616K0316C	3	16	32	16	16	16	21	125	15	28	M8X1	M8X1	MS1160	T20
6179781	EVSCFR2020K0316C	3	16	32	20	20	20	25	125	19	28	M8X1	M8X1	MS1160	T20
left hand															
6179922	EVSCFL1212K1B10	1B	10	20	12	12	12	16	125	11	21	—	—	191.916	T15
6179926	EVSCFL1212K0210	2	10	20	12	12	12	16	125	11	21	—	—	191.916	T15
6179927	EVSCFL1212K0216	2	16	32	12	12	12	16	125	11	27	—	—	191.916	T15
6179932	EVSCFL1616K0216	2	16	32	16	16	16	21	125	15	27	—	—	MS1160	T20
6179936	EVSCFL2020K0216	2	16	32	20	20	20	25	125	19	27	—	—	MS1160	T20
6179928	EVSCFL1212K0310C	3	10	20	12	12	12	17	125	11	22	M8X1	M8X1	191.916	T15
6179933	EVSCFL1616K0316C	3	16	32	16	16	16	21	125	15	28	M8X1	M8X1	MS1160	T20

NOTE: Through the pocket coolant available in seat sizes 3 and higher.
SSC = To correspond with the SSC on the insert.

screw catalogue number	screw order number	torque		thread	socket	wrench catalogue number	wrench order number
		Nm	in. lbs.				
MS1160	1099645	7	62	M5	T20	KT20	1022703
MS1162	1127019	9	80	M6	T25	KT25	1022725
MS1163	1124104	18	159	M8	T30	KT30L	3782185
MS1273	1020977	4	35	M4	T15	KT15	1022701
MS1490	2263299	17	151	M8	T45	KT45	1018227
MS1595	1094300	12	106	M6	T30	KT30	1099676
MS1970	1106668	12	106	M6	T30	KT30	1099676
MS2002	1621087	9	80	M6	T25	KT25	1022725
MS2091	1931147	9	80	M5	25IP	K25IP	2050113
191.916	1132523	5	44	M4	T15	KT15	1022701
MS1944	1732924	4	35	M4	T25	KT25	1022725



TURNING
FIRST CHOICE



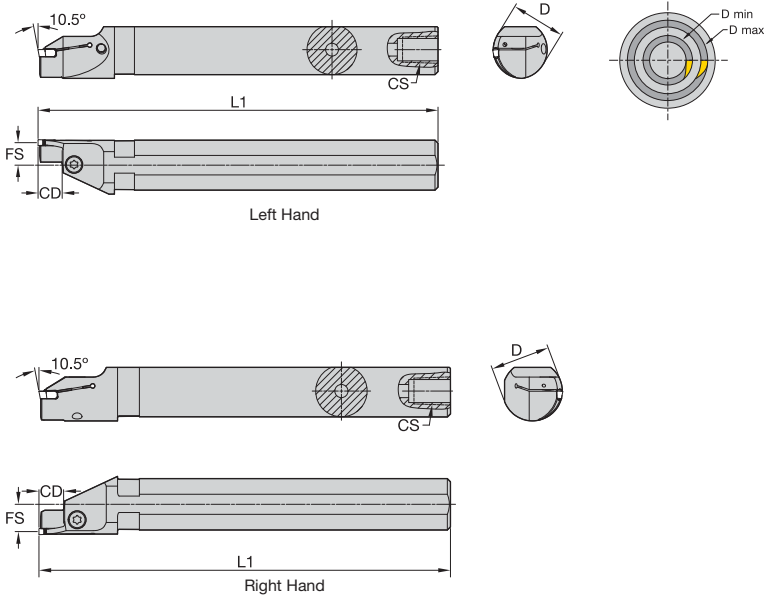
MILLING
FIRST CHOICE



HOLEMAKING
FIRST CHOICE



TOOLING SYSTEMS
FIRST CHOICE



Left Hand



Right Hand

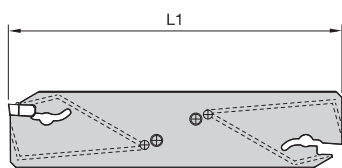
■ Steel Face Grooving Boring Bar • Metric

order number	catalogue number	SSC	CD	D	D min	D max	L1	FS	CS	Torx clamp screw	Torx
right hand											
6116521	A25REVSAR0212M026030	2	12,00	25	26	30	200	12	1/4-18 NPT	MS1160	T20
6116522	A25REVSAR0312M030035	3	12,00	25	30	35	200	11	1/4-18 NPT	MS1162	T25
left hand											
6116528	A25REVSAL0312M030035	3	12,00	25	30	35	200	11	1/4-18 NPT	MS1162	T25

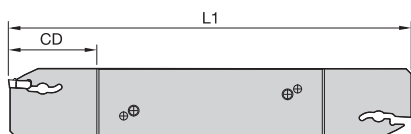
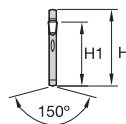
SSC = To correspond with the SSC on the insert.

screw catalogue number	screw order number	torque		thread	socket	wrench catalogue number	wrench order number
		Nm	in. lbs.				
MS1160	1099645	7	62	M5	T20	KT20	1022703
MS1162	1127019	9	80	M6	T25	KT25	1022725
MS1163	1124104	18	159	M8	T30	KT30L	3782185
MS1273	1020977	4	35	M4	T15	KT15	1022701
MS1490	2263299	17	151	M8	T45	KT45	1018227
MS1595	1094300	12	106	M6	T30	KT30	1099676
MS1970	1106668	12	106	M6	T30	KT30	1099676
MS2002	1621087	9	80	M6	T25	KT25	1022725
MS2091	1931147	9	80	M5	25IP	K25IP	2050113
191.916	1132523	5	44	M4	T15	KT15	1022701
MS1944	1732924	4	35	M4	T25	KT25	1022725

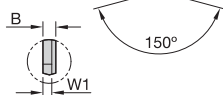
- Universal pocket for holding all insert geometries.
- Through coolant active control technology.
- For even higher productivity in cut-off and deep-grooving applications.
- Assembly wrench supplied with blade.



Straight



Reinforced

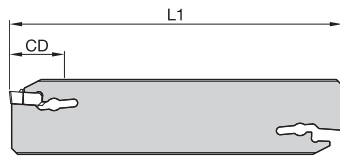
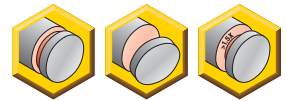


■ Beyond Evolution • Cut-Off Blade • Double Ended • Through Coolant

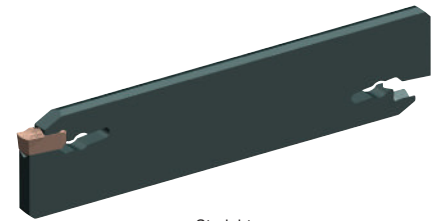
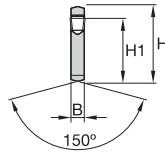
order number	catalogue number	SSC	H	W1	H1	L1	B	CD	assembly wrench
neutral hand									
6513449	EVBSN26M0233C	2	26	1,65	21,5	150	2	33	SCW5E
6513450	EVBSN32M0233C	2	32	1,65	25,1	150	2	33	SCW5E
6513521	EVBSN26J0340C	3	26	—	21,5	110	2	40	SCW5E
6513522	EVBSN26M0340C	3	26	—	21,5	150	2	40	SCW5E
6513523	EVBSN32M0350C	3	32	—	25,1	150	2	50	SCW5E
6513524	EVBSN26J0440C	4	26	—	21,5	110	3	40	SCW5E
6513525	EVBSN26M0440C	4	26	—	21,5	150	3	40	SCW5E
6513526	EVBSN32M0450C	4	32	—	25,1	150	3	50	SCW5E
6513527	EVBSN32M0560C	5	32	—	25,1	150	4	60	SCW5E
6513529	EVBSN32M0660C	6	32	—	25,1	150	5	60	SCW8E

SSC = To correspond with the SSC on the insert.

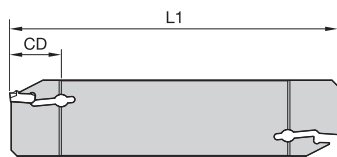
- For deep groove and cut-off applications.
- Universal pocket for holding all insert geometries.
- Assembly wrench supplied with blade.



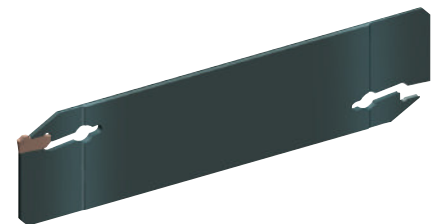
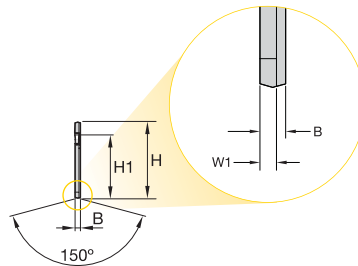
Straight



Straight



Reinforced



Reinforced

■ Double-Ended Cut-Off Blade

order number	catalogue number	SSC	H	W1	H1	L1	B	CD	assembly wrench
neutral hand									
5941706	EVBSN19G1B14	1B	19	1,15	15,5	90	2	14	SCW5E
5941708	EVBSN26J1B15	1B	26	1,15	21,5	110	2	15	SCW5E
5955392	EVBSN26J1F17	1F	26	1,30	21,5	110	2	17	SCW5E
5941707	EVBSN19G0220	2	19	—	15,5	90	2	—	SCW5E
5941709	EVBSN26J0230	2	26	—	21,5	110	2	—	SCW5E
5941710	EVBSN26M0230	2	26	—	21,5	150	2	—	SCW5E
5941724	EVBSN32M0250	2	32	—	25,1	150	2	—	SCW5E
5941721	EVBSN26J0340	3	26	—	21,5	110	2	—	SCW5E
5941722	EVBSN26M0340	3	26	—	21,5	150	2	—	SCW5E
5941725	EVBSN32M0350	3	32	—	25,1	150	2	—	SCW5E
5941723	EVBSN26J0440	4	26	—	21,5	110	3	—	SCW5E
5941726	EVBSN32M0450	4	32	—	25,1	150	3	—	SCW5E
5977635	EVBSN26J0540	5	26	—	21,5	110	4	—	SCW5E
5977637	EVBSN32M0560	5	32	—	25,1	150	4	—	SCW5E
5977638	EVBSN32M0660	6	32	—	25,1	150	5	—	SCW8E
5977640	EVBSN52X06120	6	53	—	45,3	260	5	—	SCW8E
5977639	EVBSN32M0860	8	32	—	25,1	150	7	—	SCW8E
5977721	EVBSN52X08120	8	53	—	45,3	260	7	—	SCW8E

SSC = To correspond with the SSC on the insert.

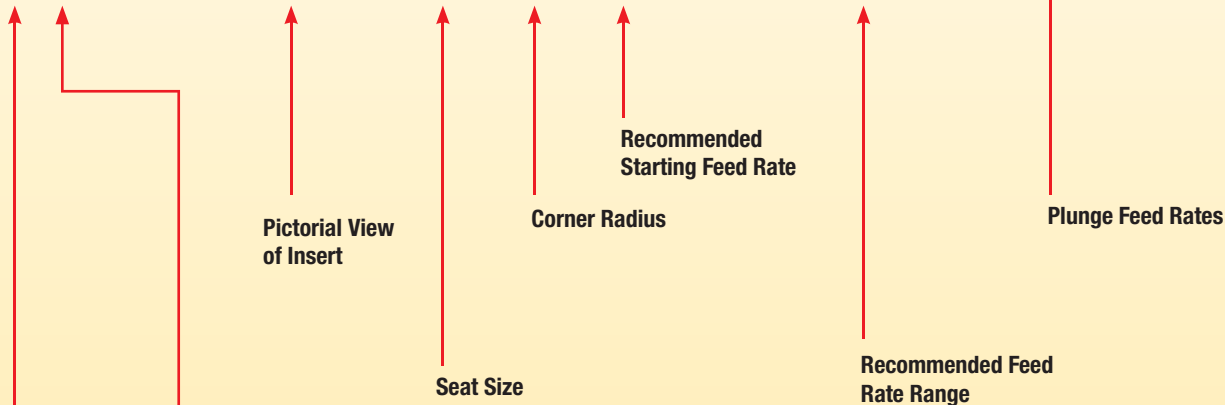


Select the geometry

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

- first choice
- alternate choice

Chip Control	Description	Insert Geometry	Seat Size (SSC)	Corner Radius		Plunge Feed Rates inch/rev (mm/rev)					
				in (mm)	in (mm)	.0020 (0,05)	.0040 (0,10)	.0060 (0,15)	.0080 (0,20)	.0100 (0,25)	.0120 (0,30)
-GUP	Positive rake angle for lower cutting forces.		1F	.008 (0,2)	.0024 (0,06)	◊					
			2	.008 (0,2)	.0031 (0,08)		◊				
			3	.008 (0,2)	.0035 (0,09)			◊			
				.016 (0,4)	.0043 (0,11)				◊		
			4	.016 (0,4)	.0047 (0,12)					◊	
				.031 (0,8)	.0059 (0,15)					◊	



Primary Workpiece Material Group

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

- first choice
- alternate choice

Chip Control Geometry Designation

Maximum Feed Rate Values

Data above is for P and K material groups. Maximum feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.	Material Group	Feed Factor
	M	.8
	N	1.2
	S	.8
	H	.5

■ Plunge feed rates

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

- first choice
- alternate choice

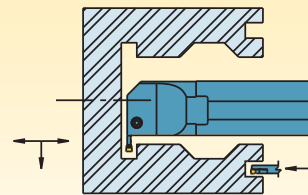
Chip Control	Description	Insert Geometry	Seat Size (SSC)	Corner Radius	Starting Conditions	Plunge Feed Rates mm/rev						
						0,05	0,10	0,15	0,20	0,25	0,30	0,35
-GUP	Positive rake angle for lower cutting forces.		1F	0,2	0,06	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			2	0,2	0,08	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			3	0,2	0,09	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,4	0,11	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			4	0,4	0,12	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,15	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			5	0,4	0,15	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			6	0,4	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,18	0,05	0,10	0,15	0,20	0,25	0,30	0,35
8	1,2	0,20	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
	0,8	0,20	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
8	1,2	0,22	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
	1,2	0,24	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
-GUN	Stable negative cutting edge allowing for more aggressive applications.		1F	0,2	0,06	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			2	0,2	0,08	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			3	0,2	0,09	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,4	0,11	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			4	0,4	0,12	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,15	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			5	0,4	0,15	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35
			6	0,4	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35
				0,8	0,18	0,05	0,10	0,15	0,20	0,25	0,30	0,35
8	1,2	0,20	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
	0,8	0,20	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
8	1,2	0,22	0,05	0,10	0,15	0,20	0,25	0,30	0,35			
	1,2	0,24	0,05	0,10	0,15	0,20	0,25	0,30	0,35			

Maximum Feed Rate Values

Data above is for P and K material groups. Maximum feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.	Material Group	Feed Factor
	M	.8
	N	1.2
	S	.8
	H	.5

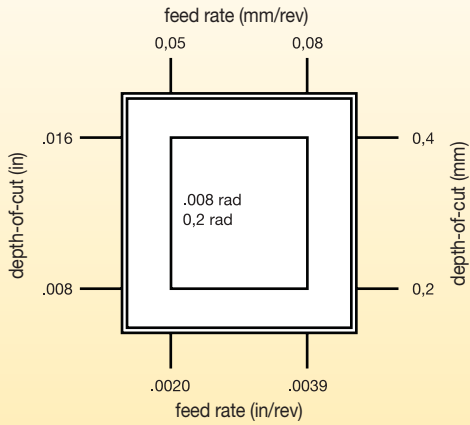
I.D. and Face Grooving

For I.D. and face grooving applications, reduce feed rate by 20%.

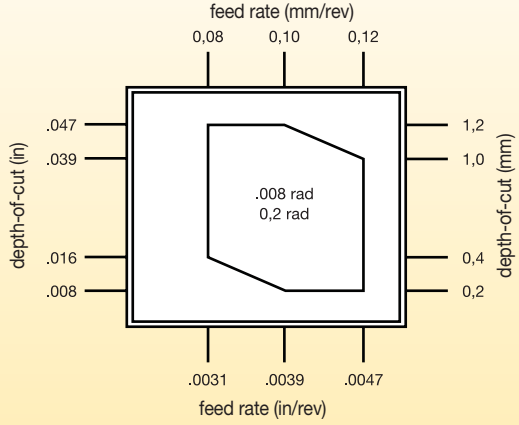


Turn and profile feed rates

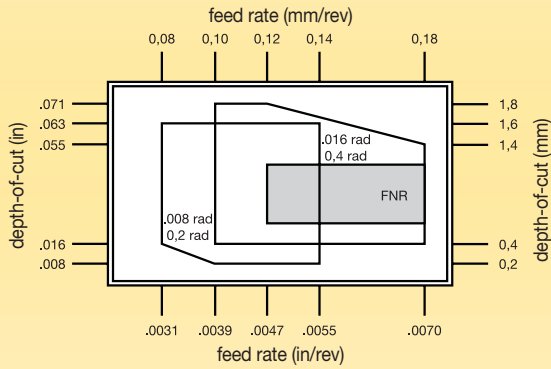
Seat Size 1F



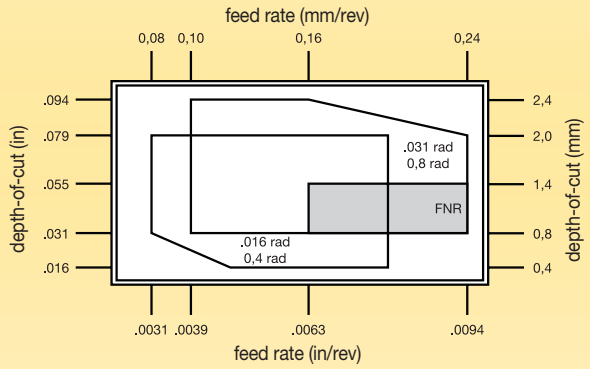
Seat Size 2



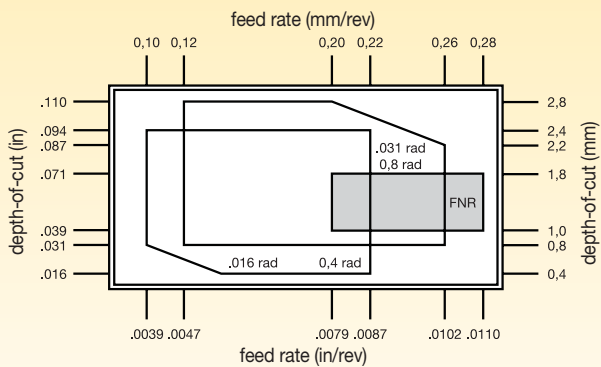
Seat Size 3



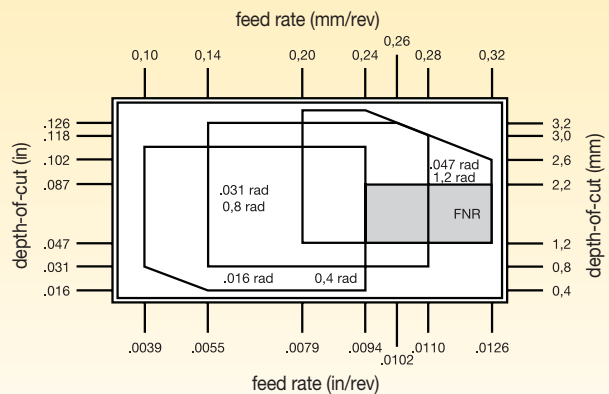
Seat Size 4



Seat Size 5

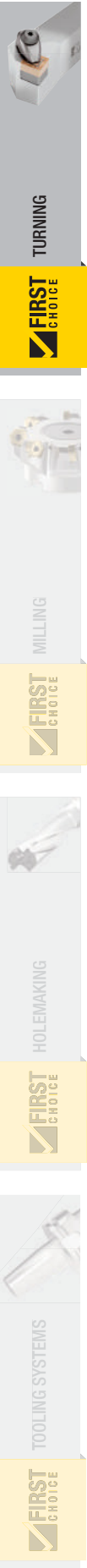


Seat Size 6

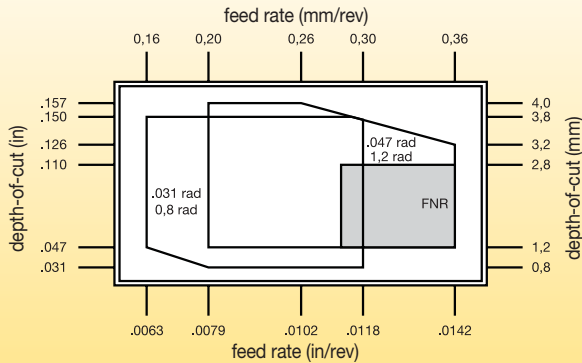
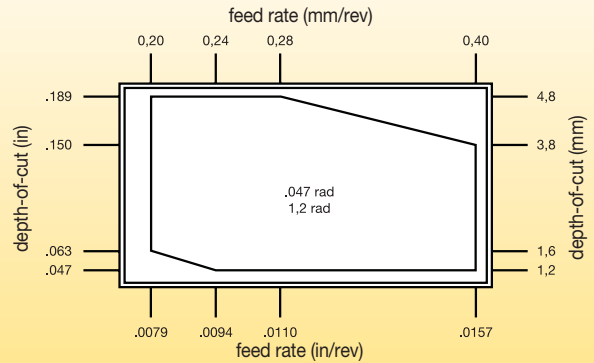


* FNR = Full Nose Radius

(continued)



(Turn and profile feed rates — continued)

Seat Size 8

Seat Size 10

Cut-Off Feed Rates
■ Plunge feed rates

- first choice
- alternate choice

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

Geometry	Description	Insert Geometry	Seat Size (SSC)	Starting Conditions mm	Cut-Off Feed Rates mm/rev							
					0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
-CL	Aggressive geometry for hard to break chips.		1B	0,06	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			2	0,07	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			3	0,08	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			4	0,09	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
-CF	Positive geometry for reduced cutting forces.		1B	0,06	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			2	0,07	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			3	0,09	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			4	0,11	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			5	0,13	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
-CM	Stable cutting edge for aggressive feed rates. Primarily in cast iron.		1B	0,06	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			2	0,07	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			3	0,09	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			4	0,11	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			5	0,14	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			6	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
-CR	Most stable cutting edge for steel.		2	0,10	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			3	0,14	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			4	0,16	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			5	0,19	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40
			6	0,21	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40

NOTE: For cut-off inserts with a lead angle, maximum feed rate should be reduced by up to 40%.

Maximum Feed Rate Values

Data above is for P and K material groups. Maximum feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.	Material Group	Feed Factor
	M	.8
	N	1.2
	S	.8
	H	.5



Recommended Starting Speeds [m/min]

Material Group		K313			KCU10			KCU25			KCM35B			KCP10B			KCP25B			KCK20B		
P	0-1	-	-	-	140	280	350	110	225	270	90	180	213	185	400	450	145	290	365	200	440	490
	2	-	-	-	140	200	300	110	160	260	90	130	155	185	270	350	145	200	305	200	300	380
	3	-	-	-	140	155	245	110	125	235	90	100	155	170	190	260	140	155	245	600	200	280
	4	-	-	-	75	110	170	60	90	160	50	70	110	90	145	200	75	110	180	100	160	220
	5	-	-	-	120	200	260	100	160	210	80	130	165	150	220	305	120	200	270	165	240	330
	6	-	-	-	110	150	230	85	120	185	70	100	145	120	180	275	110	150	230	130	190	300
M	1	60	90	120	140	210	280	90	170	245	75	120	135	-	-	-	-	-	-	-	-	-
	2	45	75	110	120	200	245	90	150	245	75	110	135	-	-	-	-	-	-	-	-	-
	3	35	65	100	120	180	245	90	140	210	75	90	135	-	-	-	-	-	-	-	-	-
K	1	30	75	120	120	180	245	100	145	225	-	-	-	170	245	440	140	200	360	210	305	550
	2	25	70	110	90	150	240	70	120	170	-	-	-	120	195	340	100	160	280	150	245	430
	3	20	60	90	60	110	150	50	85	120	-	-	-	120	170	270	100	140	220	150	210	335
N	1-2	150	370	610	150	550	975	120	440	780	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	120	275	430	120	365	700	100	290	490	-	-	-	-	-	-	-	-	-	-	-	-
	5	45	90	150	90	170	245	70	135	195	-	-	-	-	-	-	-	-	-	-	-	-
6	40	75	150	120	210	305	100	170	245	-	-	-	-	-	-	-	-	-	-	-	-	
S	1	8	30	75	15	55	135	8	40	60	8	35	60	-	-	-	-	-	-	-	-	-
	2	8	35	75	15	60	135	8	30	75	8	30	60	-	-	-	-	-	-	-	-	-
	3	8	40	75	15	70	150	15	40	75	15	35	60	-	-	-	-	-	-	-	-	-
	4	8	45	75	15	70	170	8	50	110	15	45	90	-	-	-	-	-	-	-	-	-
H	1	-	-	-	30	45	60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	15	30	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

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The Kennametal mobile app provides easy access to product information and calculators on both iPhone® and Android™ devices. We've highlighted a few of the key features...

There's an app for that.

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View speeds and feeds information for metalworking products.

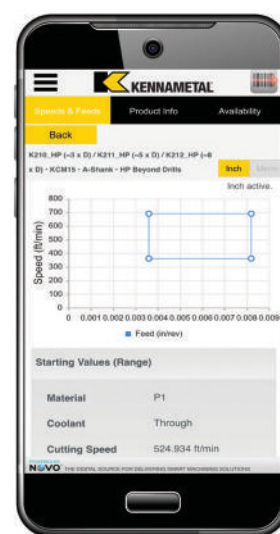
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Check global availability of products. View available quantities by providing your Kennect login credentials.

CALCULATORS

Utilise our machining calculators for milling and drilling applications.

By just scanning the bar code on the insert packet, you can find the most productive cutting conditions for tool life, process time, and chip control.



NOTE: The app is currently only available in the English-language version. We have plans to translate the app in different languages with future releases.



Kennametal on the Web

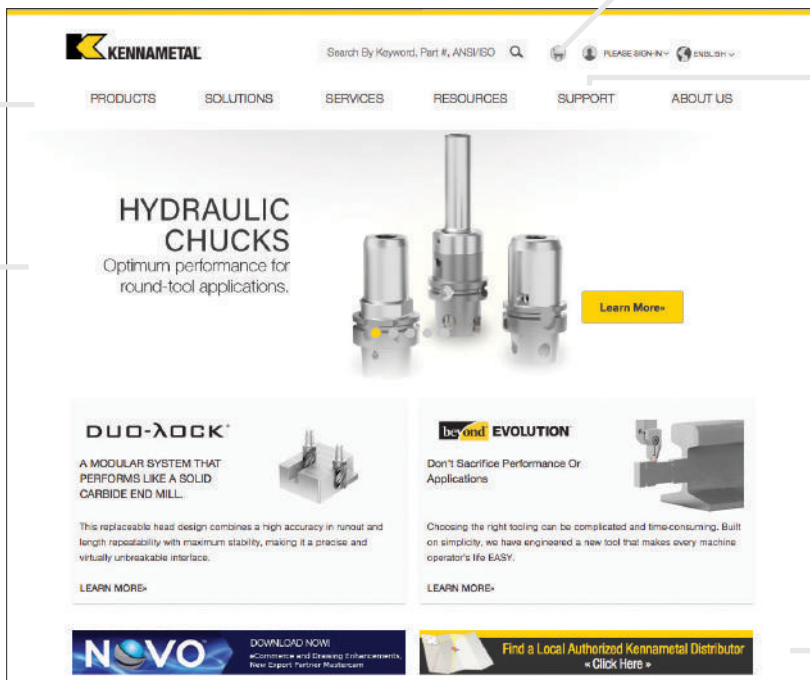
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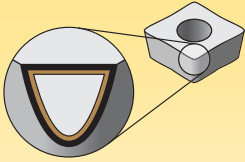


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Coatings provide high-speed capability and are engineered for finishing to light roughing.

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

wear resistance ← → toughness

Grades	Coating	Grade Description	Performance Matrix																	
				05	10	15	20	25	30	35	40	45								
KCU10		<p>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.</p> <p>Application: The KCU10™ grade is ideal for finishing to general machining of most workpiece materials at a wide range of speed and feed capabilities. Excellent for machining most steels, stainless steels, cast irons, non-ferrous materials, and super alloys with improved edge toughness and higher cutting speed/feed capability.</p>	P																	
	—		M																	
KCU25		<p>Composition: An advanced PVD grade with hard AlTiN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities.</p> <p>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 cuts and high feed rates.</p>	P																	
	—		M																	



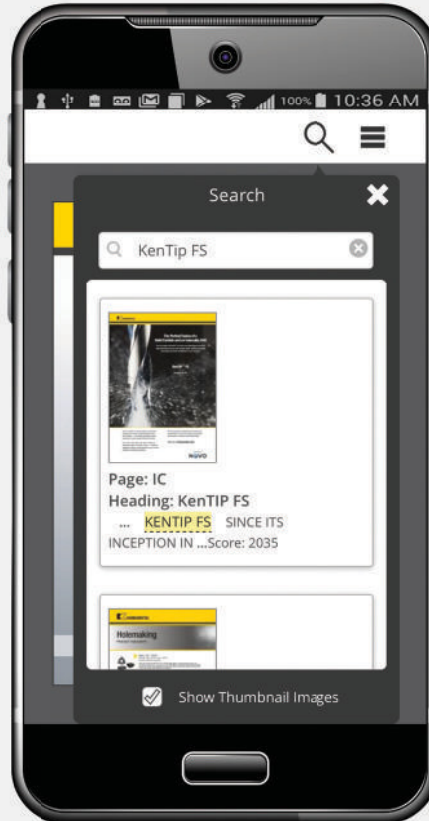
- TURNING
- MILLING
- HOLEMAKING
- TOOLING SYSTEMS

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➤ A4™ Tooling and Beyond™ Inserts

For All Your O.D. and I.D. Applications

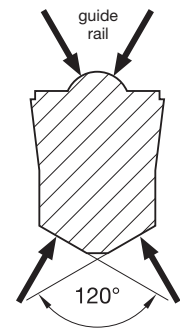
Primary Application

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 delivers a very high metal removal rate.

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.



TURNING



MILLING

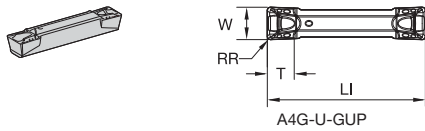


HOLEMAKING



TOOLING SYSTEMS





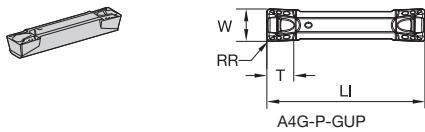
● first choice
○ alternate choice

P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

GUP Precision Moulded

ISO catalogue number	SSC	W	RR	LI	T	KCU10	KCU25
A4G0205M02U02GUP	2	2,05	0,2	20	2,0	3791263	3791279
A4G0305M03U02GUP	3	3,05	0,2	20	3,0	-	3791280
A4G0305M03U04GUP	3	3,05	0,4	20	3,0	3791266	3791281
A4G0405M04U04GUP	4	4,05	0,4	20	3,4	3791267	3774691
A4G0505M05U04GUP	5	5,05	0,4	25	4,2	-	3791282
A4G0505M05U08GUP	5	5,05	0,8	25	4,2	3791270	3774723
A4G0605M06U04GUP	6	6,05	0,4	30	4,5	-	3791283
A4G0605M06U08GUP	6	6,05	0,8	30	4,5	-	3791284
A4G0605M06U12GUP	6	6,05	1,2	30	4,5	-	3791285
A4G0805M08U08GUP	8	8,05	0,8	30	6,0	-	3791286
A4G1005M10U08GUP	10	10,05	0,8	30	6,0	-	3791287

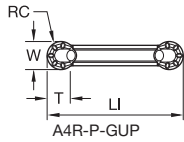
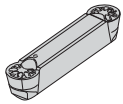
SSC = To correspond with the SSC on the toolholder.



GUP Precision Ground

ISO catalogue number	SSC	W	RR	LI	T	KCU10	KCU25
A4G0200M02P02GUP	2	2,00	0,2	20	1,9	3781192	3781252
A4G0300M03P02GUP	3	3,00	0,2	20	2,9	3781278	3781253
A4G0300M03P04GUP	3	3,00	0,4	20	2,9	3781279	3781254
A4G0400M04P02GUP	4	4,00	0,2	20	3,3	3781280	3781255
A4G0400M04P04GUP	4	4,00	0,4	20	3,3	3781281	3781256
A4G0400M04P08GUP	4	4,00	0,8	20	3,3	3781282	3781257
A4G0500M05P04GUP	5	5,00	0,4	25	4,1	3781283	-
A4G0500M05P08GUP	5	5,00	0,8	25	4,1	-	3781259
A4G0600M06P04GUP	6	6,00	0,4	30	4,5	-	3781260
A4G0600M06P08GUP	6	6,00	0,8	30	4,5	3781286	3781261
A4G0800M08P08GUP	8	8,00	0,8	30	6,0	3781287	-

SSC = To correspond with the SSC on the toolholder.



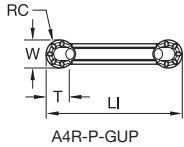
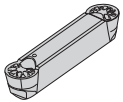
● first choice
 ○ alternate choice

P	●	●
M	●	●
K	○	○
N	●	○
S	●	●
H	○	

■ GUP Full Radius Precision Moulded

ISO catalogue number	SSC	W	RC	LI	T	KCU10	KCU25
A4R0305M03U00GUP	3	3,05	1,5	20	—	-	5146918
A4R0405M04U00GUP	4	4,05	2,0	20	—	-	5136359
A4R0505M05U00GUP	5	5,05	2,5	25	—	5327663	5146919
A4R0805M08U00GUP	8	8,05	4,0	30	6,5	-	5136423

SSC = To correspond with the SSC on the toolholder.

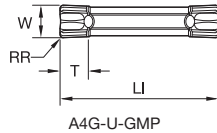
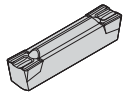


■ GUP Full Radius Precision Ground

ISO catalogue number	SSC	W	RC	LI	T	KCU10	KCU25
A4R0300M03P00GUP	3	3,00	1,5	20	—	-	5147211
A4R0400M04P00GUP	4	4,00	2,0	20	—	-	5147212
A4R0500M05P00GUP	5	5,00	2,5	25	—	-	5147213

SSC = To correspond with the SSC on the toolholder.





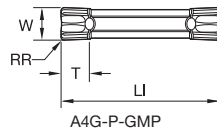
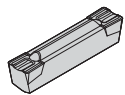
- first choice
- alternate choice

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

■ **GMP Precision Moulded**

ISO catalogue number	SSC	W	RR	LI	T	KCU10	KCU25	KC5010	KC5025
A4G0205M02U02GMP	2	2,05	0,2	20	2,0	-	4114297	2983982	2984013
A4G0305M03U02GMP	3	3,05	0,2	20	3,5	-	4114303	-	1952744
A4G0305M03U04GMP	3	3,05	0,4	20	3,5	4034776	-	1952746	1952747
A4G0405M04U04GMP	4	4,05	0,4	20	3,4	-	-	1952749	1952750
A4G0505M05U04GMP	5	5,05	0,4	25	4,2	-	-	1952755	1923838
A4G0505M05U08GMP	5	5,05	0,8	25	4,2	-	-	1952758	-
A4G0605M06U04GMP	6	6,05	0,4	30	4,9	-	-	-	2263387

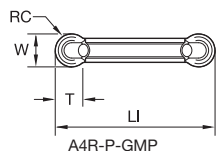
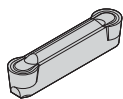
SSC = To correspond with the SSC on the toolholder.



■ **GMP Precision Ground**

ISO catalogue number	SSC	W	RR	LI	T	KCU10	KCU25	KC5010	KC5025
A4G0200M02P02GMP	2	2,00	0,2	20	2,0	-	4114295	2984015	2984016
A4G0300M03P02GMP	3	3,00	0,2	20	3,5	-	4114299	1952760	1923833
A4G0300M03P04GMP	3	3,00	0,4	20	3,5	-	-	1952762	1952763
A4G0400M04P02GMP	4	4,00	0,2	20	-	4034777	-	-	1952765
A4G0400M04P04GMP	4	4,00	0,4	20	3,5	-	-	1952766	1952767
A4G0400M04P08GMP	4	4,00	0,8	20	3,5	-	-	1952768	-
A4G0500M05P04GMP	5	5,00	0,4	25	-	-	-	1923835	-
A4G0500M05P08GMP	5	5,00	0,8	25	-	-	-	1923840	1952773
A4G0600M06P04GMP	6	6,00	0,4	30	4,9	-	-	2263414	-
A4G0600M06P08GMP	6	6,00	0,8	30	4,9	-	-	2263415	-

SSC = To correspond with the SSC on the toolholder.



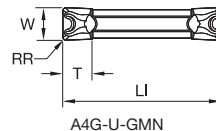
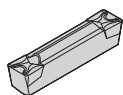
● first choice
○ alternate choice

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

■ GMP Full Radius Precision Ground

ISO catalogue number	SSC	W	RC	LI	T	KCU10	KCU25	KC5010	KC5025
A4R0200M02P00GMP	2	2,00	1,0	20	1,7	4034813	4114343	2984026	2984027
A4R0300M03P00GMP	3	3,00	1,5	20	2,5	4034815	4114345	2234826	2234825
A4R0400M04P00GMP	4	4,00	2,0	20	—	4034817	4114347	1952778	1952779
A4R0500M05P00GMP	5	5,00	2,5	25	4,1	4034819	—	1952780	—
A4R0600M06P00GMP	6	6,00	3,0	30	4,8	—	—	2263403	—

SSC = To correspond with the SSC on the toolholder.

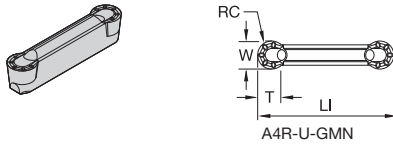


■ GMN Precision Moulded

ISO catalogue number	SSC	W	RR	LI	T	KCU10	KCU25	KC5010	KC5025
A4G0205M02U02GMN	2	2,05	0,2	20	2,0	4034718	4114296	2983980	2983981
A4G0305M03U02GMN	3	3,05	0,2	20	3,5	—	4114302	1952700	1952701
A4G0305M03U04GMN	3	3,05	0,4	20	3,5	—	4114304	1952702	1952733
A4G0405M04U04GMN	4	4,05	0,4	20	3,4	4034780	4114309	1952734	1952735
A4G0405M04U08GMN	4	4,05	0,8	20	3,4	4034782	4114311	1952736	1952737
A4G0505M05U04GMN	5	5,05	0,4	25	4,2	4034786	4114316	1952738	1923836
A4G0505M05U08GMN	5	5,05	0,8	25	4,2	4034788	4114318	1952740	1923837
A4G0605M06U04GMN	6	6,05	0,4	30	4,9	4034792	—	2263361	2263362
A4G0605M06U08GMN	6	6,05	0,8	30	4,9	—	—	—	2263375
A4G0805M08U08GMN	8	8,05	0,8	30	6,4	—	—	2263378	—

SSC = To correspond with the SSC on the toolholder.





● first choice
○ alternate choice

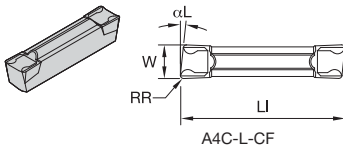
P	●	●	○	○
M	●	●	●	○
K	○	○	○	○
N	●	○	●	○
S	●	●	○	○
H	○		○	

GMN Full Radius Precision Moulded

ISO catalogue number	SSC	W	RC	LI	T	KCU10	KCU25	KC5010	KC5025
A4R0205M02U00GMN	2	2,05	1,1	20	1,8	-	4114344	-	-
A4R0305M03U00GMN	3	3,05	1,5	20	2,6	-	4114346	2234824	2234823
A4R0405M04U00GMN	4	4,05	2,0	20	3,5	4034818	-	1952774	1952775
A4R0505M05U00GMN	5	5,05	2,5	25	4,2	-	4114350	1952776	1952777
A4R0605M06U00GMN	6	6,05	3,0	30	4,9	-	-	2263397	-
A4R0805M08U00GMN	8	8,05	4,0	30	6,5	4034824	-	2263399	2263400

SSC = To correspond with the SSC on the toolholder.

A4 Cut-Off Inserts



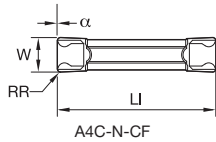
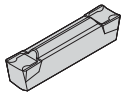
● first choice
○ alternate choice

P	○
M	○
K	○
N	○
S	○
H	

CF Precision Moulded • Left Hand

ISO catalogue number	SSC	W	RR	LI	αL	KC5025
A4C0205L10CF02	2	1,99	0,2	20	10.0	2979110
A4C0305L06CF02	3	3,05	0,2	20	6.0	1952849

SSC = To correspond with the SSC on the toolholder.



A4C-N-CF

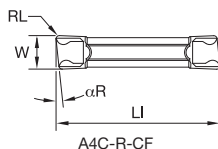
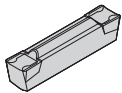
- first choice
- alternate choice

P	●	○
M	●	○
K	○	○
N	○	○
S	●	○
H		

■ CF Precision Moulded • Neutral

ISO catalogue number	SSC	W	RR	LI	α	KCU25	KC5025
A4C0155N00CF01	1	1,50	0,2	16	—	4113708	2972258
A4C0205N00CF02	2	2,05	0,2	20	—	4113711	2979111
A4C0255N00CF02	2B	2,50	0,2	20	—	4114284	2979216
A4C0305N00CF02	3	3,05	0,2	20	—	4114287	1952847
A4C0405N00CF02	4	4,05	0,2	20	—	-	2234816

SSC = To correspond with the SSC on the toolholder.



A4C-R-CF

- first choice
- alternate choice

P	●	○
M	●	○
K	○	○
N	○	○
S	●	○
H		

■ CF Precision Moulded • Right Hand

ISO catalogue number	SSC	W	RL	LI	αR	KCU25	KC5025
A4C0155R06CF01	1	1,50	0,2	16	6.0	-	2972262
A4C0155R10CF01	1	1,50	0,2	16	10.0	4113709	-
A4C0155R16CF01	1	1,50	0,2	16	16.0	-	2973094
A4C0205R06CF02	2	1,99	0,2	20	6.0	4113712	2979112
A4C0205R10CF02	2	1,99	0,2	20	10.0	4114283	-
A4C0255R06CF02	2B	2,49	0,2	20	6.0	-	2979217
A4C0305R06CF02	3	3,05	0,2	20	6.0	4114288	1952848
A4C0305R10CF02	3	3,05	0,2	20	10.0	4114289	2234819

SSC = To correspond with the SSC on the toolholder.



TURNING

FIRST CHOICE

MILLING

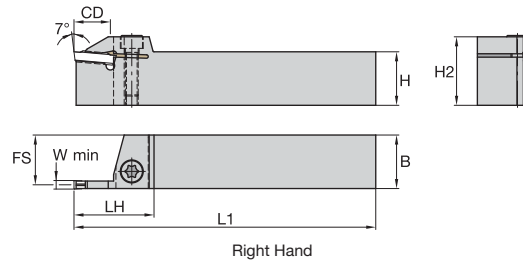
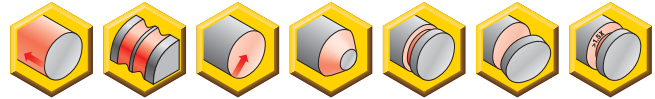
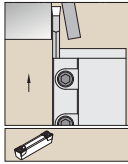
FIRST CHOICE

HOLEMAKING

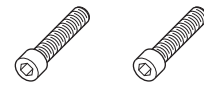
FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



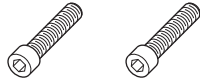
Integral Straight • Metric



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

(continued)

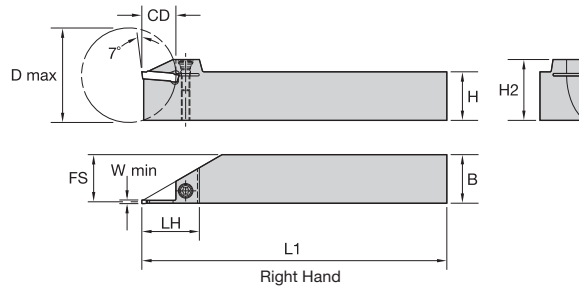
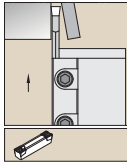
(Integral Straight • Metric — continued)

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

SSC = To correspond with the SSC on the insert.



TURNING
FIRST CHOICE



■ Integral Straight Top Clamp • Metric

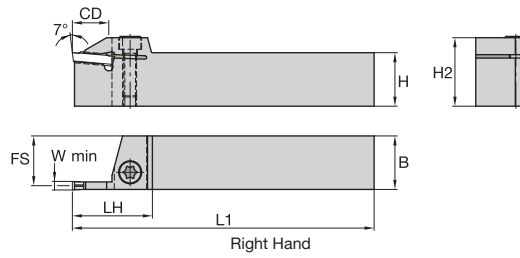
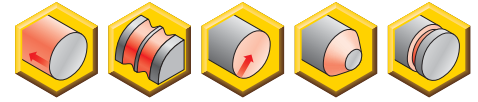
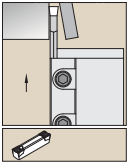
order number	catalogue number	SSC	D max	CD	W min	H	B	H2	L1	FS	LH	clamp screw	clamp screw	wrench size clamp screw
right hand														
4169745	A4SCR1212K0214	2	28	14,000	2,00	12	12	21	125	11,17	28	MS1160	—	T20
4169746	A4SCR1616K0217	2	34	17,000	2,00	16	16	26	125	15,20	31	—	MS1944	T25
4169747	A4SCR1212K0314	3	28	14,000	3,00	12	12	23	125	10,72	30	—	MS2091	25 IP
4169748	A4SCR1616K0317	3	34	17,000	3,00	16	16	27	125	14,72	33	—	MS2091	25 IP
left hand														
4169749	A4SCL1212K0214	2	28	14,000	2,00	12	12	21	125	11,17	28	MS1160	—	T20
4169750	A4SCL1616K0217	2	34	17,000	2,00	16	16	26	125	15,20	31	—	MS1944	T25
4169752	A4SCL1616K0317	3	34	17,000	3,00	16	16	27	125	14,72	33	—	MS2091	25 IP

SSC = To correspond with the SSC on the insert.

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

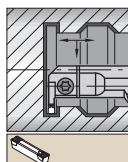


■ Integral Straight • Short Projection Toolholders • Metric

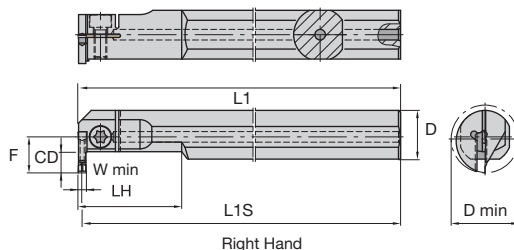
order number	catalogue number	SSC	CD	W min	H	B	H2	L1	FS	LH	clamp screw	clamp screw	Torx
right hand													
3854265	A4SMR2020K0208	2	8	2	20	20	24	125	19	26	—	MS1160	T20
3854267	A4SMR2020K0308	3	8	3	20	20	27	125	19	28	MS1595	—	T30
3854269	A4SMR2020K0408	4	8	4	20	20	27	125	18	28	MS1595	—	T30
3854271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

SSC = To correspond with the SSC on the insert.





Steel shank with through coolant.



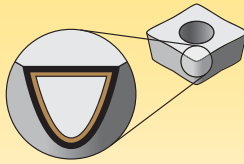
Right Hand

Steel Boring Bar • Metric

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

SSC = To correspond with the SSC on the insert.




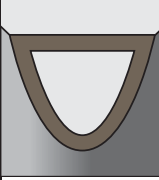
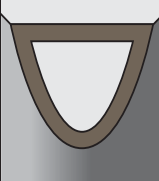
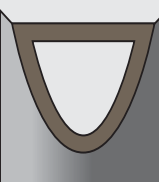


Coatings provide high-speed capability and are engineered for finishing to light roughing.

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

wear resistance ← → toughness

Grades

Coating	Grade Description		05	10	15	20	25	30	35	40	45
KCUI10	 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 KCUI10™ 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 high-temp alloys with improved edge toughness, notch resistance, and higher cutting speed/feed capability.	P									
		M									
		K									
		N									
		S									
		H									
		beyond									
KCUI25	 Composition: An advanced PVD grade with hard AITIN coating and fine-grain unalloyed substrate. The new and improved coating improves edge stability with wide range speed and feed capabilities. Application: The KCUI25™ 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 cuts and high feed rates.	P									
		M									
		K									
		N									
		S									
		beyond									
KC5010	 Composition: An advanced PVD AITIN 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 high-temp alloys under stable conditions. It also performs well machining hardened and short chipping materials.	P									
		M									
		K									
		N									
		S									
		H									
		beyond									
KC5025	 Composition: An advanced PVD-AITIN-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									
		beyond									

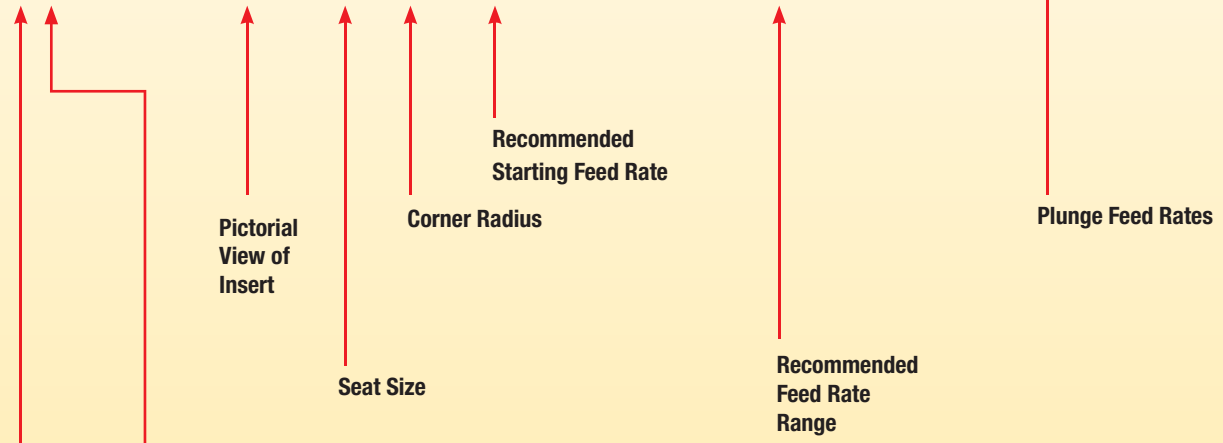


Select the geometry

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

- first choice
- alternate choice

Chip Control	Description	Insert Geometry	Seat Size (SSC)	Corner Radius mm	Starting Conditions mm	Plunge Feed Rates mm/rev					
						0,05	0,10	0,15	0,20	0,25	0,30
-GUP	Groove and turn inserts in new Beyond™ grades.		2	0,2	0,08						
			3	0,2	0,09						
			3	0,4	0,11						
			4	0,4	0,12						
			4	0,8	0,15						



Primary Workpiece Material Group

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

- first choice
- alternate choice

Chip Control Geometry Designation

Maximum Feed Rate Values

Data above is for P and K material groups. Maximum feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.	Material Group	Feed Factor
	M	.8
	N	1.2
	S	.8
	H	.5

Plunge Feed Rates

- first choice
- alternate choice

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

Chip Control	Description	Insert Geometry	Seat Size (SSC)	Corner Radius	Starting Conditions	Plunge Feed Rates mm/rev									
						0,05	0,10	0,15	0,20	0,25	0,30	0,35			
-GUP	<ul style="list-style-type: none"> 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. 		2	0,2	0,08	●	○								
				0,2	0,09	○	○								
			3	0,4	0,11		○	○							
				0,4	0,12		○	○							
			4	0,8	0,15			○	○						
				0,4	0,15			○	○						
			5	0,8	0,16				○	○					
				0,4	0,16				○	○					
			6	0,8	0,18					○	○				
				1,2	0,20					○	○				
			8	0,4	0,17						○	○			
				0,8	0,20						○	○			
10	1,2	0,22							○	○					
	0,4	0,18							○	○					
-GMP	<ul style="list-style-type: none"> Groove and turn inserts. Available in moulded and precision-ground styles. Positive rake angle. Available in metric widths only. 		2	0,2	0,08	●	○								
				0,2	0,09	○	○								
			3	0,4	0,11		○	○							
				0,4	0,12		○	○							
			4	0,8	0,15			○	○						
				0,4	0,15			○	○						
			5	0,8	0,16				○	○					
				0,4	0,16				○	○					
			6	0,8	0,18					○	○				
				1,2	0,20					○	○				
			8	0,4	0,17						○	○			
				0,8	0,20						○	○			
10	1,2	0,22							○	○					
	0,4	0,18							○	○					
-GMN	<ul style="list-style-type: none"> Groove and turn moulded and precision ground inserts. Stable cutting edge. Available in metric and inch widths. 		2	0,2	0,08	●	○								
				0,2	0,09	○	○								
			3	0,4	0,11		○	○							
				0,4	0,12		○	○							
			4	0,8	0,15			○	○						
				0,4	0,15			○	○						
			5	0,8	0,16				○	○					
				0,4	0,16				○	○					
			6	0,8	0,18					○	○				
				1,2	0,20					○	○				
			8	0,4	0,17						○	○			
				0,8	0,20						○	○			
10	1,2	0,22							○	○					
	0,4	0,18							○	○					

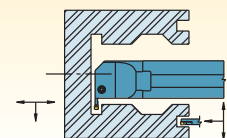
Maximum Feed Rate Values

Data above is for P and K material groups. **Maximum** feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.

Material Group	Feed Factor
M	.8
N	.8
S	.5
H	1.2

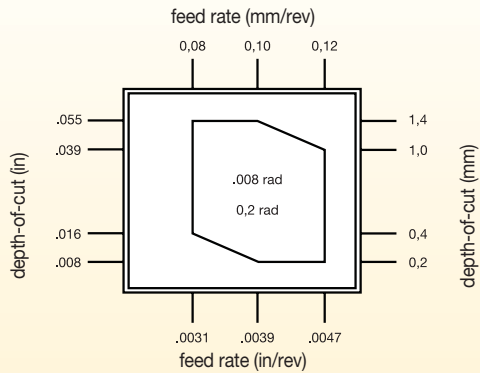
I.D. and Face Grooving

For I.D. and face grooving applications, reduce feed rate by 20%.

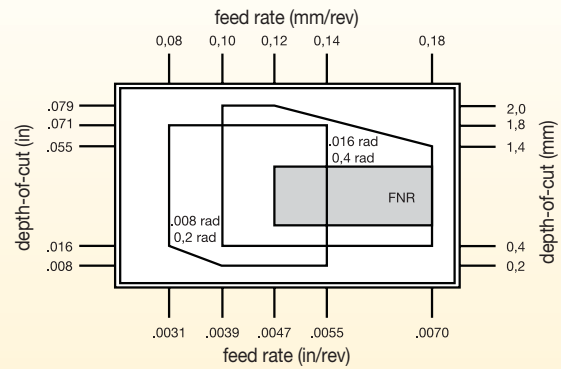


Turn and profile feed rates • GUP/GMP Geometries

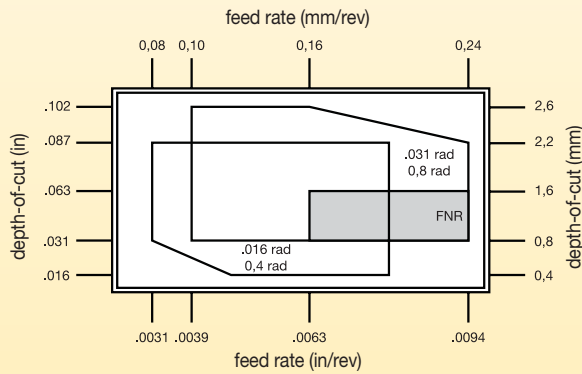
Seat Size 2



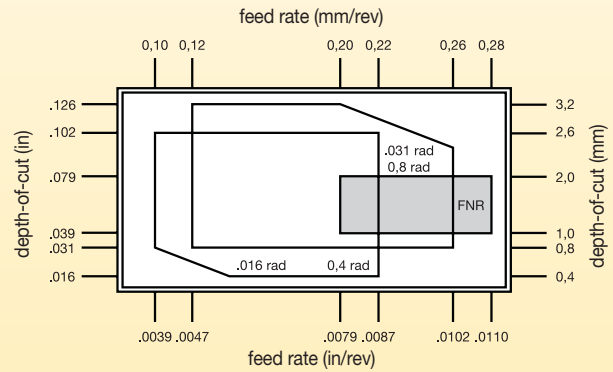
Seat Size 3



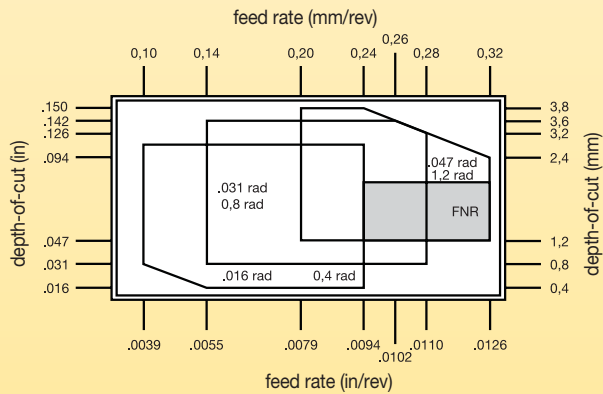
Seat Size 4



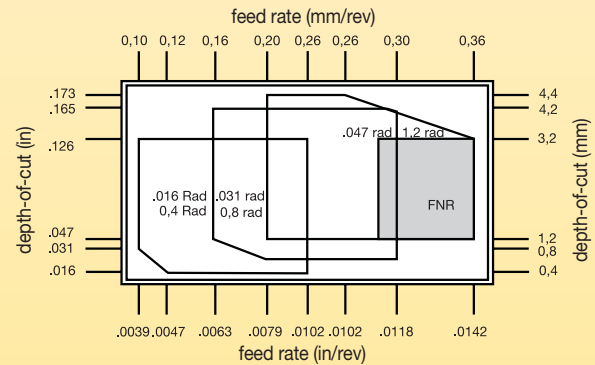
Seat Size 5



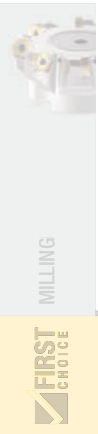
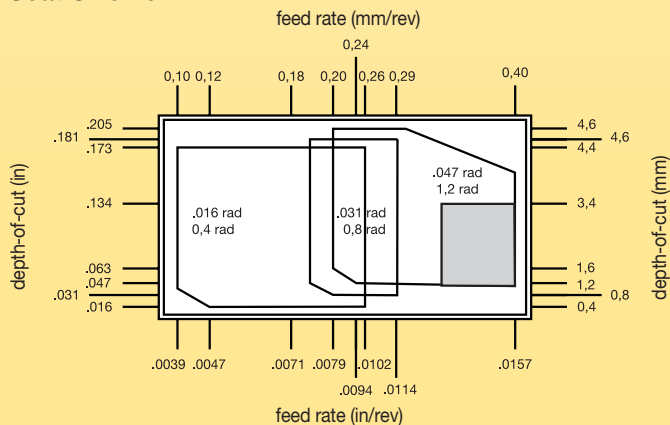
Seat Size 6



Seat Size 8

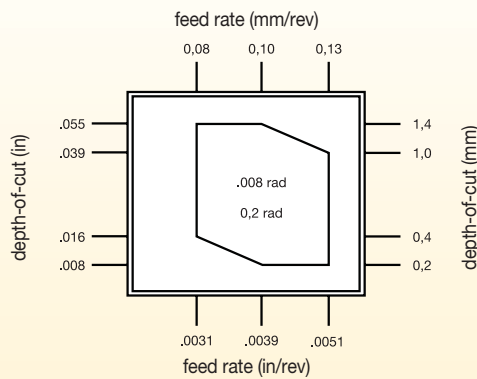


Seat Size 10

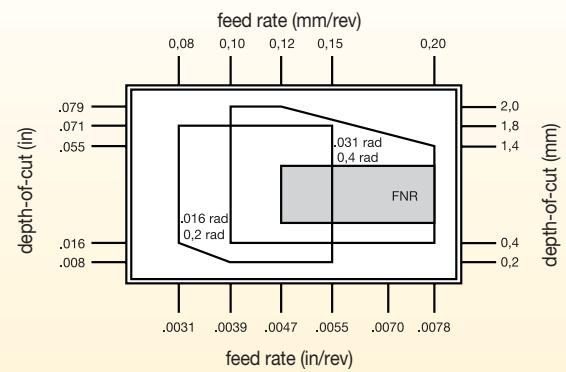


Turn and profile feed rates • GMN Geometries

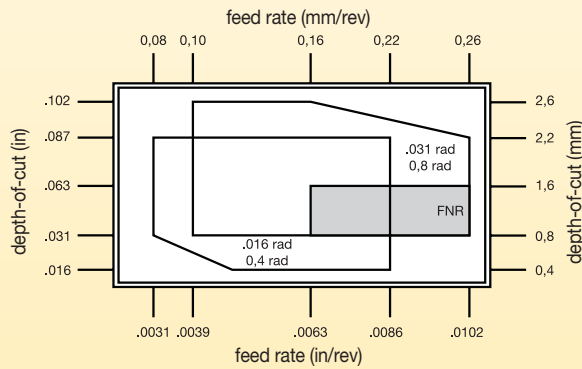
Seat Size 2



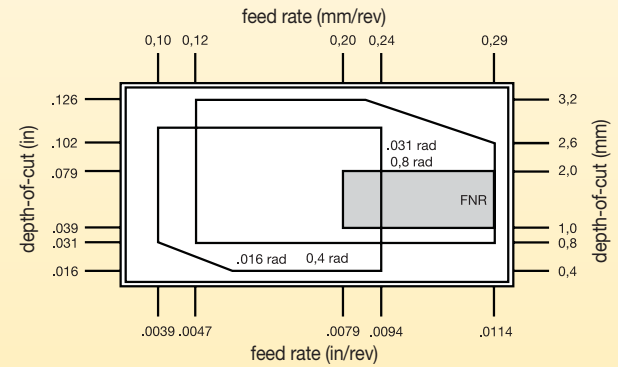
Seat Size 3



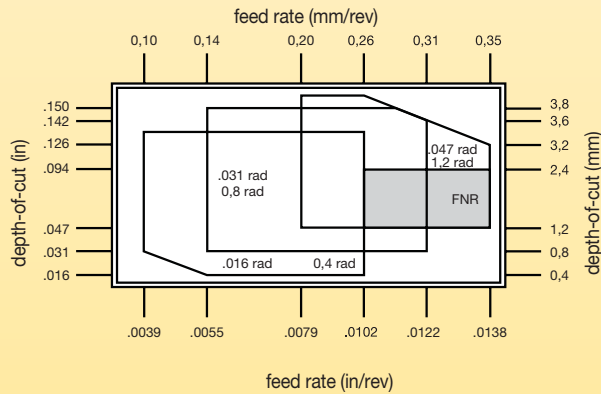
Seat Size 4



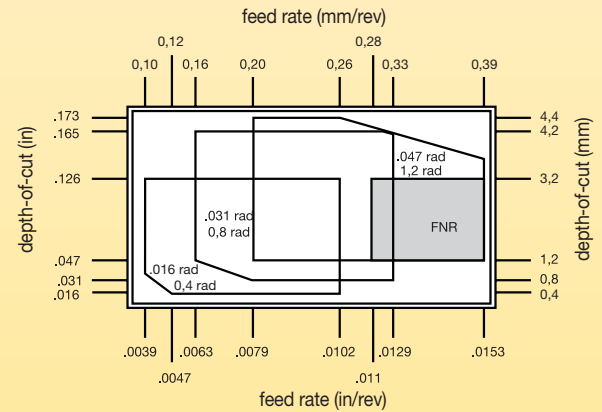
Seat Size 5



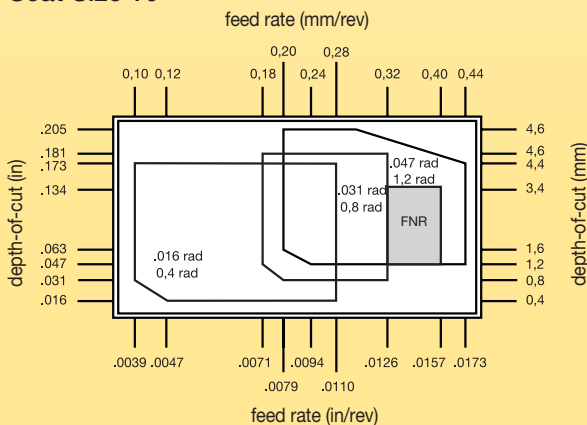
Seat Size 6



Seat Size 8



Seat Size 10



■ Cut-Off Feed Rates

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

- first choice
- alternate choice

Chip Control	Description	Insert Geometry	Seat Size (SSC)	Starting Conditions mm	Cut-Off Feed Rates mm/rev			
					0,05	0,10	0,15	0,20
-A4C-CF 	<ul style="list-style-type: none"> • High positive rake angle. • Sharp cutting edge. • Available in neutral lead angle in 6° and 10° right- and left-hand styles. 		1	0,06				
			2/2B	0,07				
			3	0,09				
			4	0,11				

Maximum Feed Rate Values

Data above is for P and K material groups. Maximum feed rates should be adjusted by multiplying max feed rate values by following factors for shown material groups.	Material Group	Feed Factor
	M	.8
	N	.8
	S	.5
	H	1.2

Mobile Apps

The Kennametal mobile app provides easy access to product information and calculators on both iPhone® and Android™ devices. We've highlighted a few of the key features...

There's an app for that.

SPEEDS & FEEDS

View speeds and feeds information for metalworking products.

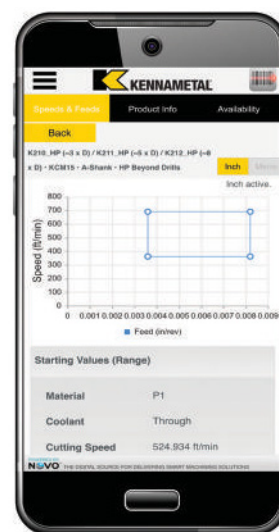
PRODUCT AVAILABILITY

Check global availability of products. View available quantities by providing your Konnect login credentials.

CALCULATORS

Utilise our machining calculators for milling and drilling applications.

➔ By just scanning the bar code on the insert packet, you can find the most productive cutting conditions for tool life, process time, and chip control.



NOTE: The app is currently only available in the English-language version. We have plans to translate the app in different languages with future releases.



■ Recommended Starting Speeds [m/min]

Material Group		K313	KCU10/KC5010	KCU25/KC5025	KCP10	KCP25	KCK20B	KY3500
P	0-1	- - -	140 280 335	110 225 270	185 400 450	145 290 365	200 440 490	- - -
	2	- - -	140 200 245	110 160 195	185 270 350	145 200 305	200 300 380	- - -
	3	- - -	140 155 245	110 125 195	170 190 260	140 155 245	600 200 280	- - -
	4	- - -	75 110 170	60 90 135	90 145 200	75 110 180	100 160 220	- - -
	5	- - -	120 200 260	100 160 210	150 220 305	120 200 270	165 240 330	- - -
	6	- - -	110 150 230	85 120 185	120 180 275	110 150 230	130 190 300	- - -
M	1	60 90 120	140 210 260	90 170 245	- - -	- - -	- - -	- - -
	2	45 75 110	120 200 245	90 150 245	- - -	- - -	- - -	- - -
	3	35 65 100	120 180 245	90 140 210	- - -	- - -	- - -	- - -
K	1	30 75 120	120 180 245	100 145 195	170 245 440	140 200 360	210 305 550	180 760 1040
	2	25 70 110	90 150 210	70 120 170	120 195 340	100 160 280	150 245 430	275 365 500
	3	20 60 90	60 110 150	50 85 120	120 170 270	100 140 220	150 210 335	- - -
N	1-2	150 370 610	150 550 975	120 440 780	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	4	120 275 430	120 365 610	100 290 490	- - -	- - -	- - -	- - -
	5	45 90 150	90 170 245	70 135 195	- - -	- - -	- - -	- - -
	6	40 75 150	120 210 305	100 170 245	- - -	- - -	- - -	- - -
S	1	8 30 75	15 55 135	8 40 60	- - -	- - -	- - -	- - -
	2	8 35 75	15 60 135	8 30 75	- - -	- - -	- - -	- - -
	3	8 40 75	15 70 135	15 40 75	- - -	- - -	- - -	- - -
	4	8 45 75	15 70 170	8 50 110	- - -	- - -	- - -	- - -
H	1	- - -	30 45 60	- - -	- - -	- - -	- - -	- - -
	2	- - -	15 30 45	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	4	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Material Group		KT315	KB5625	KB1630	KD1405
P	0-1	180 440 475	- - -	- - -	- - -
	2	195 270 400	- - -	- - -	- - -
	3	180 210 275	- - -	- - -	- - -
	4	75 160 210	- - -	- - -	- - -
	5	150 250 310	- - -	- - -	- - -
	6	140 200 300	- - -	- - -	- - -
M	1	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -
K	1	60 275 550	- - -	180 760 1040	- - -
	2	135 275 360	- - -	- - -	- - -
	3	180 230 360	- - -	- - -	- - -
N	1-2	- - -	- - -	- - -	365 610 1040
	3	- - -	- - -	- - -	275 480 800
	4	- - -	- - -	- - -	300 550 920
	5	- - -	- - -	- - -	275 610 1070
	6	- - -	- - -	- - -	150 460 760
	S	1	- - -	- - -	120 200 275
2		- - -	- - -	120 215 275	- - -
3		- - -	- - -	120 250 275	- - -
4		- - -	- - -	- - -	- - -
H	1	- - -	45 150 230	45 120 170	- - -
	2	- - -	45 140 230	45 110 170	- - -
	3	- - -	45 130 230	45 100 170	- - -
	4	- - -	45 120 230	45 90 170	- - -

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.



➤ LT • Laydown Triangle Threading

Primary Application

Laydown triangle (LT) threading is the system of choice for fine-pitch threads, high-helix/multistart threads, and single-point threading in small-diameter bores. With a wide selection of CB-style chip control inserts, you will receive superior chip management for excellent surface finishes and minimal operator intervention. The low-profile design enables unrestricted chip flow — ideal for I.D. threads. Variable shim angles enable proper cutting geometry for high-helix angle and reverse helix angle threading, maximising tool life and improving thread quality.

Features and Benefits

Precision-Ground Thread Form on LT and LT-CB

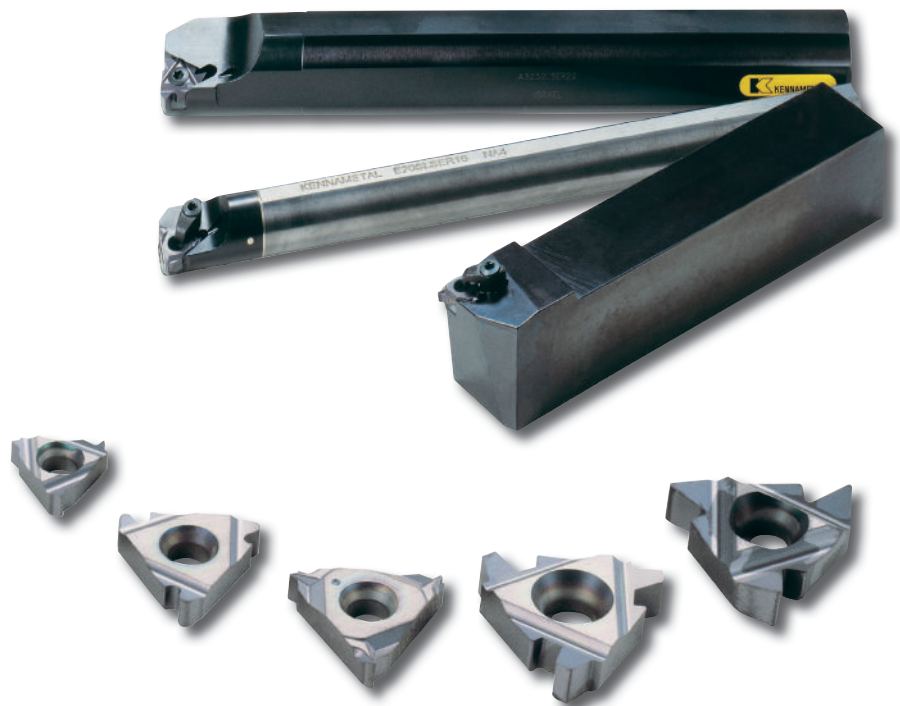
- Minimises built-up edge.
- Precisely cuts most common materials.
- Reduces cutting forces.
- Ensures accurate, high-quality threads.







Superior Chip Control

- Eliminates long, troublesome coils.
- Excellent for internal threading operations.
- Available in both partial and full profile inserts for all common thread forms.

KC5025™ Premium PVD TiAlN-Coated Grades

- Increase tool life at existing machining conditions.
- Increase productivity by outperforming conventional PVD grades with up to a 30% advantage in cutting speeds.

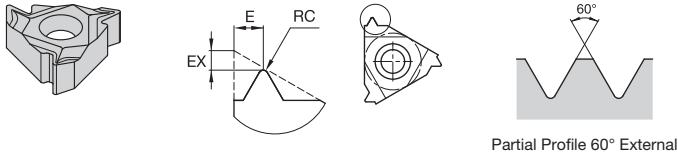


style		thread profile	standard	tolerance class	cresting	application	thread type	page(s)
CB	thread profile							
 LT-60CB	 LT-60	Partial profile 60°	—	—	N	General use for 60° thread forms, such as ISO and UN, where non-cresting inserts are desired to cut a variety of pitches.	external	A96
							internal	A97
 LT-ISOCB	 LT-ISO	Metric ISO	ISO R262, DIN 13	6g/6H	Y	Widely used metric 60° V-form for all industries.	external	A98
							internal	A99
 LT-WCB	 LT-W	Whitworth, BSW, BSF, BSP	BS 84:1956, ISO 228/1:1985, DIN 259	Medium Class A	Y	Widely used 55° form for gas and water connections.	external	A100
							internal	A101



TURNING

FIRST CHOICE



● first choice
○ alternate choice

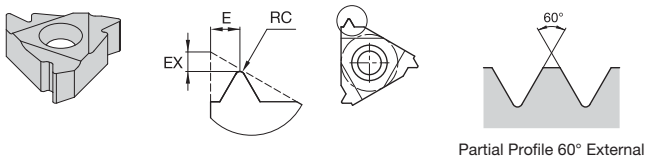
P	●
M	●
K	●
N	○
S	●
H	

■ **LT-ER-60CB**

catalogue number	insert size	RC	EX	E	thread pitch mm	TPI	KC5025
right hand							
LT16ERAG60CB	16	0,08	0,9	1,50	0,50-3,0	8-48	1679780

MILLING

FIRST CHOICE



● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

■ **LT-ER/L-60**

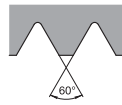
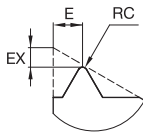
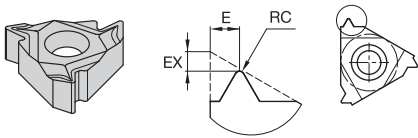
catalogue number	insert size	RC	EX	E	thread pitch mm	TPI	KC5025
right hand							
LT16ERA60	16	0,05	0,8	0,89	0,50-1,50	16-48	1743744
LT16ERG60	16	0,28	1,2	1,70	1,75-3,0	8-14	1743746

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



Partial Profile 60° Internal

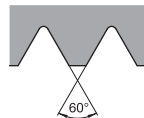
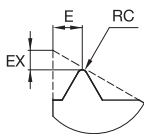
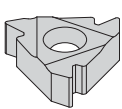
- first choice
- alternate choice

P	●
M	●
K	●
N	○
S	●
H	



LT-NR-60CB

catalogue number	insert size	RC	EX	E	thread pitch mm	TPI	KC5025
right hand							
LT16NRAG60CB	16	0,05	0,9	1,50	0,50-3,0	8-48	1698208
LT16NRG60CB	16	0,16	1,0	1,50	1,75-3,0	8-14	1698209



Partial Profile 60° Internal

- first choice
- alternate choice

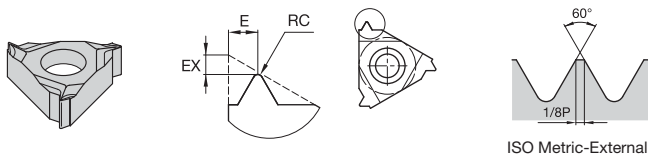
P	●
M	●
K	●
N	○
S	●
H	



LT-NR/L-60

catalogue number	insert size	RC	EX	E	thread pitch mm	TPI	KC5025
left hand							
LT16NLA60	16	0,05	0,8	0,89	0,50-1,50	16-48	1743830
LT16NLAG60	16	0,05	1,2	1,70	0,50-3,0	8-48	1743831
right hand							
LT16NRA60	16	0,05	0,8	0,89	0,50-1,50	16-48	1743928
LT16NRAG60	16	0,05	1,2	1,70	0,50-3,0	8-48	1743929
left hand							
LT16NLG60	16	0,15	1,2	1,70	1,75-3,0	8-14	1743832
right hand							
LT16NRG60	16	0,15	1,2	1,70	1,75-3,0	8-14	1743930



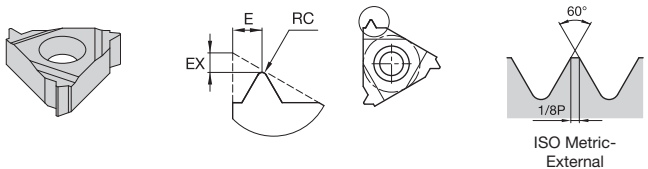


● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

■ LT-ER-ISOCB

catalogue number	insert size	RC	EX	E	thread pitch mm	KC5025
right hand						
LT16ER05ISOCB	16	—	1,2	0,50	0,50	1690872
LT16ER075ISOCB	16	—	1,2	0,61	0,75	1690874
LT16ER10ISOCB	16	—	0,7	0,79	1,0	1690876
LT16ER125ISOCB	16	—	0,7	0,79	1,25	1690878
LT16ER15ISOCB	16	—	0,7	0,79	1,5	1690880
LT16ER175ISOCB	16	—	1,2	1,50	1,75	1692102
LT16ER20ISOCB	16	—	1,2	1,50	2,0	1692109
LT16ER25ISOCB	16	—	1,2	1,50	2,5	1698205
LT16ER30ISOCB	16	—	1,3	1,50	3,0	1698207



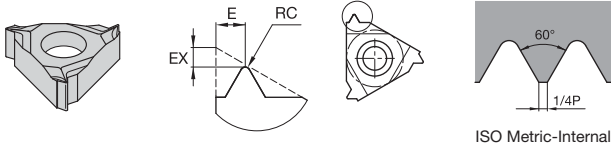
● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

■ LT-ER/L-ISO

catalogue number	insert size	RC	EX	E	thread pitch mm	KC5025
right hand						
LT16ER05ISO	16	—	0,6	0,40	0,50	1724524
LT16ER075ISO	16	—	0,6	0,61	0,75	1724527
LT16ER10ISO	16	—	0,7	0,69	1,0	1725108
LT16ER125ISO	16	—	0,8	0,89	1,25	1725109
LT16ER15ISO	16	—	0,8	0,99	1,5	1725110
LT16ER175ISO	16	—	0,9	1,19	1,75	1725221
LT16ER20ISO	16	—	1,0	1,30	2,0	1725222
LT16ER25ISO	16	—	1,1	1,50	2,5	1725223
LT16ER30ISO	16	—	1,2	1,60	3,0	1725224



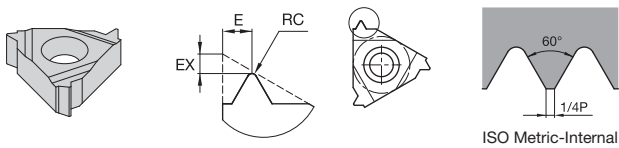


● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

LT-NR-ISO CB

catalogue number	insert size	RC	EX	E	thread pitch mm	KC5025
right hand						
LT16NR10ISO CB	16	—	0,7	0,79	1,0	1698210
LT16NR15ISO CB	16	—	0,7	0,79	1,5	1712552
LT16NR20ISO CB	16	—	1,1	1,50	2,0	1712554
LT16NR25ISO CB	16	—	1,1	1,50	2,5	1712555



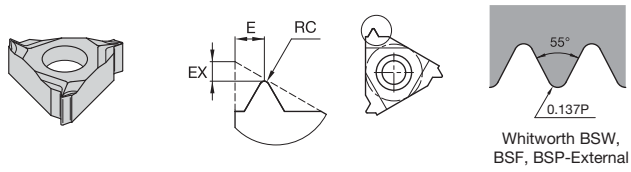
● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

LT-NR/L-ISO

catalogue number	insert size	RC	EX	E	thread pitch mm	KC5025
left hand						
LT16NL10ISO	16	—	0,6	0,69	1,0	1724494
LT16NL15ISO	16	—	0,8	0,99	1,5	1724497
LT16NL20ISO	16	—	1,0	1,30	2,0	1724499
LT16NL25ISO	16	—	1,1	1,50	2,5	1724525
LT16NL30ISO	16	—	1,1	1,50	3,0	1724526
right hand						
LT16NR05ISO	16	—	0,6	0,40	0,50	1725472
LT16NR075ISO	16	—	0,6	0,61	0,75	1725474
LT16NR10ISO	16	—	0,6	0,69	1,0	1725475
LT16NR125ISO	16	—	0,8	0,89	1,25	1725476
LT16NR15ISO	16	—	0,8	0,99	1,5	1725477
LT16NR175ISO	16	—	0,9	1,19	1,75	1725478
LT16NR20ISO	16	—	1,0	1,30	2,0	1725511
LT16NR25ISO	16	—	1,1	1,50	2,5	1725512
LT16NR30ISO	16	—	1,1	1,50	3,0	1725513
LT16NR35ISO	—	0,03	0,8	0,35	0,35	6733754



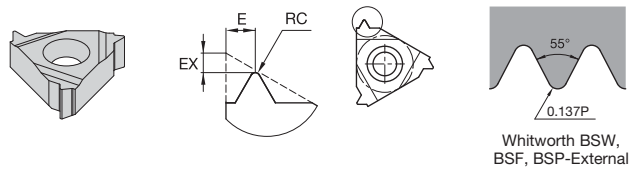


● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

LT-ER-WCB

catalogue number	insert size	RC	EX	E	TPI	KC5025
right hand						
LT16ER11WCB	16	—	1,3	1,50	11	1712614
LT16ER14WCB	16	—	1,3	1,50	14	1712616



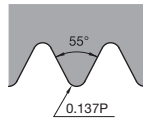
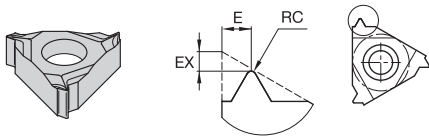
● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	●
H	

LT-ER/L-W

catalogue number	insert size	RC	EX	E	TPI	KC5025
right hand						
LT16ER11W	16	—	1,1	1,50	11	1743760
LT16ER14W	16	—	1,0	1,19	14	1743758
LT16ER19W	16	—	0,8	0,99	19	1743755
LT16ER28W	16	—	0,6	0,69	28	1743752





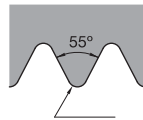
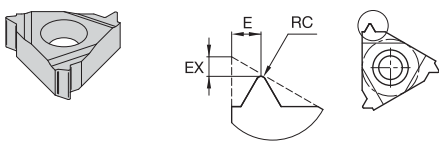
Whitworth BSW,
BSF, BSP-Internal

- first choice
- alternate choice

P	●
M	●
K	●
N	○
S	●
H	

LT-NR-WCB

catalogue number	insert size	RC	EX	E	TPI	KC5025
right hand						
LT16NR11WCB	16	—	1,3	1,50	11	1712669
LT16NR14WCB	16	—	1,3	1,50	14	1712670



Whitworth BSW,
BSF, BSP-Internal

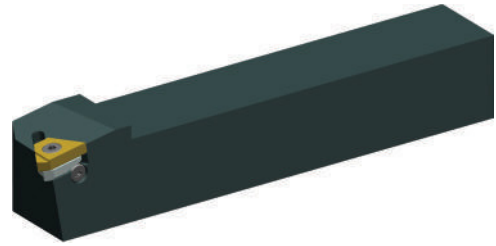
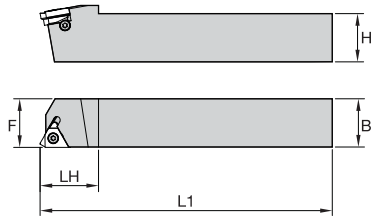
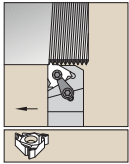
- first choice
- alternate choice

P	●
M	●
K	●
N	○
S	●
H	

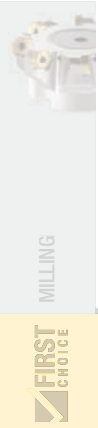
LT-NR/L-W

catalogue number	insert size	RC	EX	E	TPI	KC5025
left hand						
LT16NL11W	16	—	1,1	1,50	11	1743847
right hand						
LT16NR11W	16	—	1,1	1,50	11	1743945
LT16NR14W	16	—	1,0	1,19	14	1743943
LT16NR19W	16	—	0,8	0,99	19	1743940



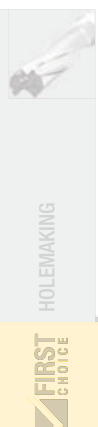


■ LSA



order number	catalogue number	H	B	F	L1	LH	gage insert	shim	shim screw	Torx	Torx	insert screw	Torx
right hand													
1136984	LSASR1616H16	16	16	16	100	25	LT16ER	SMYE3	SSY3T	T10	T15	SSA3T	T10
1136992	LSASR2020K16	20	20	20	125	30	LT16ER	SMYE3	SSY3T	T10	T15	SSA3T	T10
1137000	LSASR2525M16	25	25	25	150	30	LT16ER	SMYE3	SSY3T	T10	T15	SSA3T	T10

NOTE: Clamp assembly to be ordered separately for increased productivity in heavy applications.

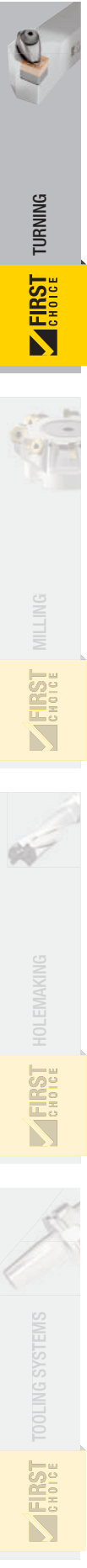


■ Recommended Starting Speeds [m/min]

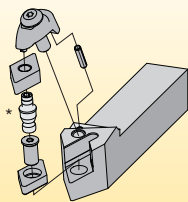
Material Group		KC5025		
P	0-1	105	165	230
	2	100	150	200
	3	75	125	170
	4	60	95	130
	5	75	130	170
	6	50	90	130
M	1	90	170	230
	2	75	140	200
	3	75	135	200
K	1	90	135	180
	2	70	120	170
	3	50	85	120
N	1-2	120	305	455
	3	60	105	150
	4	100	200	305
	5	70	135	195
	6	100	170	245
	S	1	20	40
2		20	35	45
3		20	35	45
4		45	85	120
H	1	-	-	-
	2	-	-	-
	3	-	-	-
	4	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.





Kenclamp™ D-style clamping



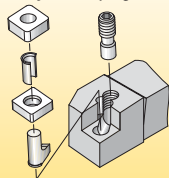
*The pin is an optional spare part and not in the standard configuration.

catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
KMSP415IP	M6,3 x 1,0	15 IP	4	35	3,0
KMSP515IP	M8 x 1,0	15 IP	4,5	40	3,3
KMSP625IP	M10 x 1,0	25 IP	8	71	5,9
KMSP315IP	M5 x 0,8	15 IP	3	27	2,2
KMSP5S15IP	M8 x 1,0	15 IP	4,5	40	3,3
KMSP4S15IP	M6,3 x 1,0	15 IP	4	35	3,0



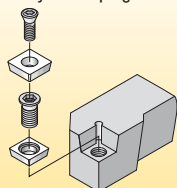
catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
CM234R ASSY	M6 x 1	15 IP	4,5	40	3,3
CM209R ASSY	M6 x 1	15 IP	4,5	40	3,3
CM210R ASSY	M8 x 1	25 IP	8	71	5,9
CM215R ASSY	M6 x 1	15 IP	4,5	40	3,3

Kenlever™ P-style clamping



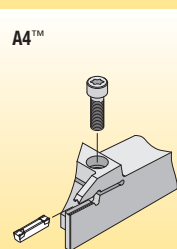
catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
514.122	M6	10 IP	2	18	1,5
514.123	M8 x 1,0	15 IP	3	27	2,2
514.124	M8 x 1,0	15 IP	3	27	2,2
514.125	M8 x 1,0	15 IP	3	27	2,2
514.112	M5 x 0,8	8 IP	2	18	1,5

Screw-On S-style clamping



catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
MS1153	M2,5 x 0,45	T7	0,7	6	0,5
MS1156	M3,5 x 0,6	T15	1,7	15	1,3
MS1155	M3,5 x 0,6	T15	1,7	15	1,3
MS1158	M4 x 0,5	T15	2,6	23	1,9
MS1939	M2,5 x 0,45	T7	0,7	6	0,5
MS2066	M2,5 x 0,45	7 IP	0,7	6	0,5
MS2055	M3,5 x 0,8	15 IP	1,7	15	1,3
MS1160	M5 x 0,8	T20	4	35	3,0
SSA3T	5-40UNC	T10	2,2	20	—

A4™



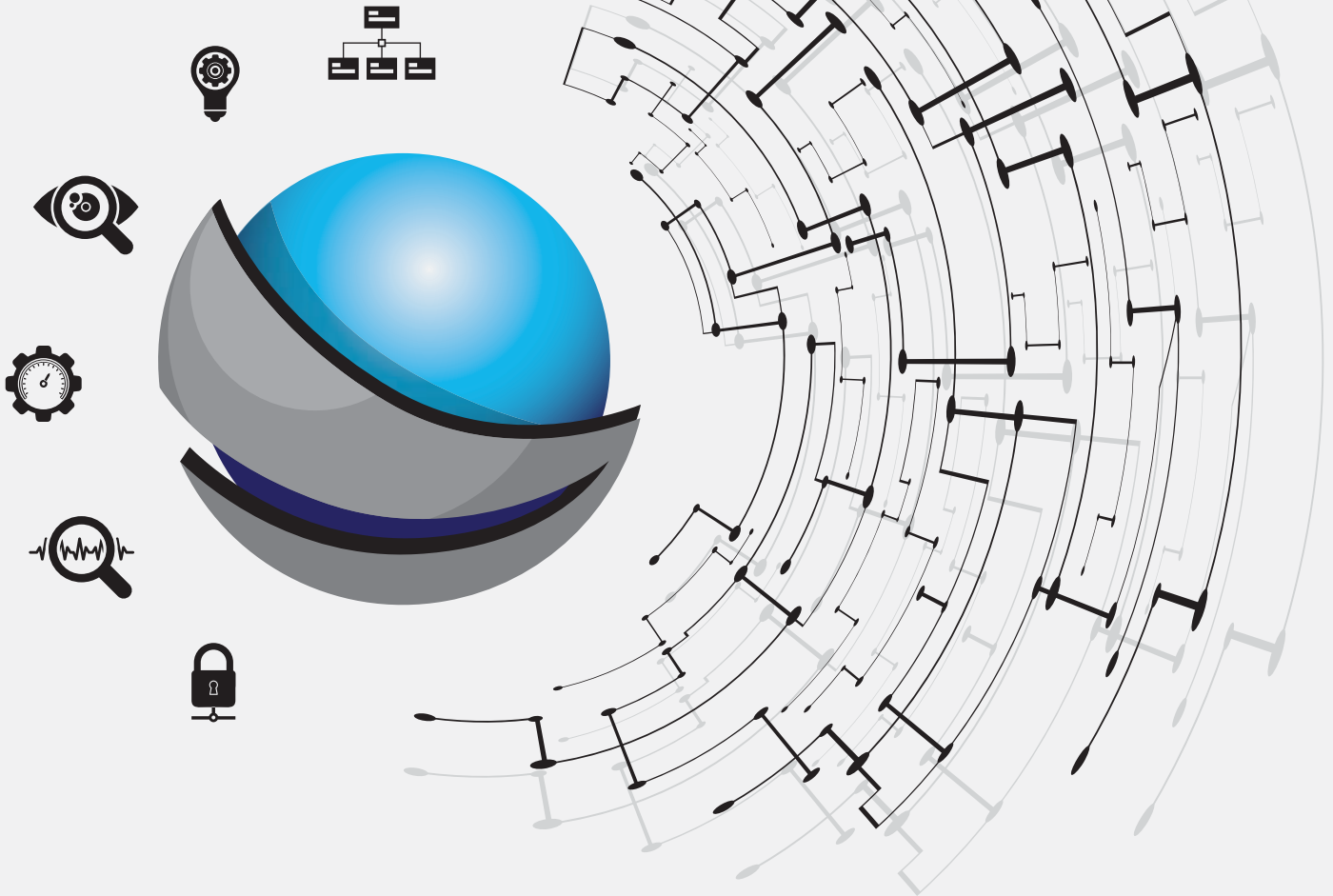
catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
MS1156	M3,5 x 0,6	T15	3,5	31	3
MS1160	M5 x 0,8	T20	7	62	5
MS1490	M8 x 1,25	T45	17	151	13
MS1595	M6 x 1,0	T30	12	106	9
MS1944	M4 x 0,7	T25	4	35	3
MS1970	M6 x 1,0	T30	12	106	9
MS2091	M5 x 0,8	25 IP	9	80	7

Beyond™ Evolution™



catalogue number	thread size	drive size	recommended torque		
			Nm	in. lbs.	ft. lbs.
MS1160	M5	T20	7	62	5
MS1162	M6	T25	9	80	7
MS1163	M8	T30	18	159	13
MS1273	M4	T15	4	35	3
MS1490	M8	T45	17	151	13
MS1595	M6	T30	12	106	9
MS1944	M4	T25	4	35	3
MS1970	M6	T30	12	106	9
MS2002	M6	T25	9	80	7
MS2091	M5	25 IP	9	80	7
191.916	M4	T15	5	44	4

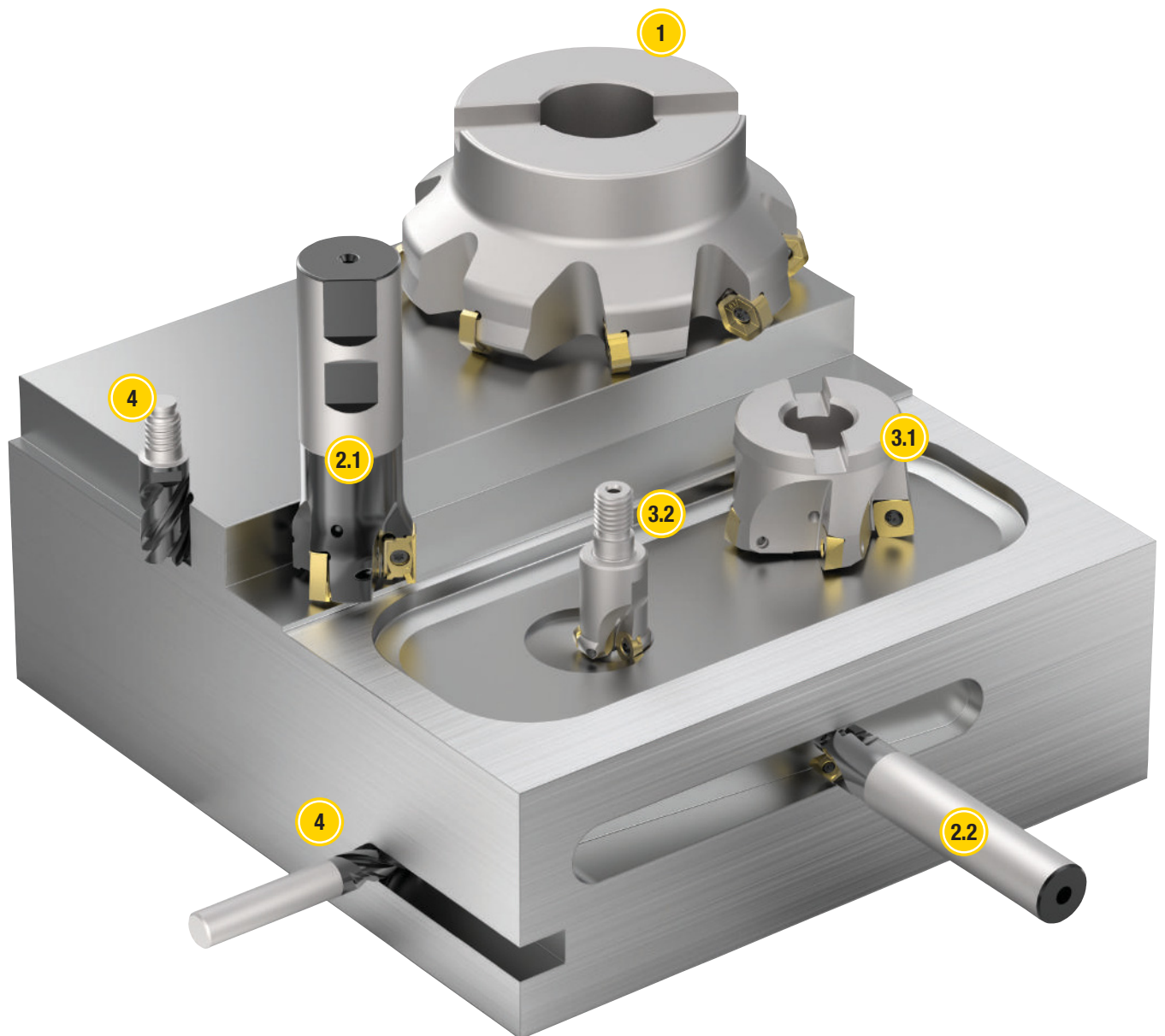
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Milling



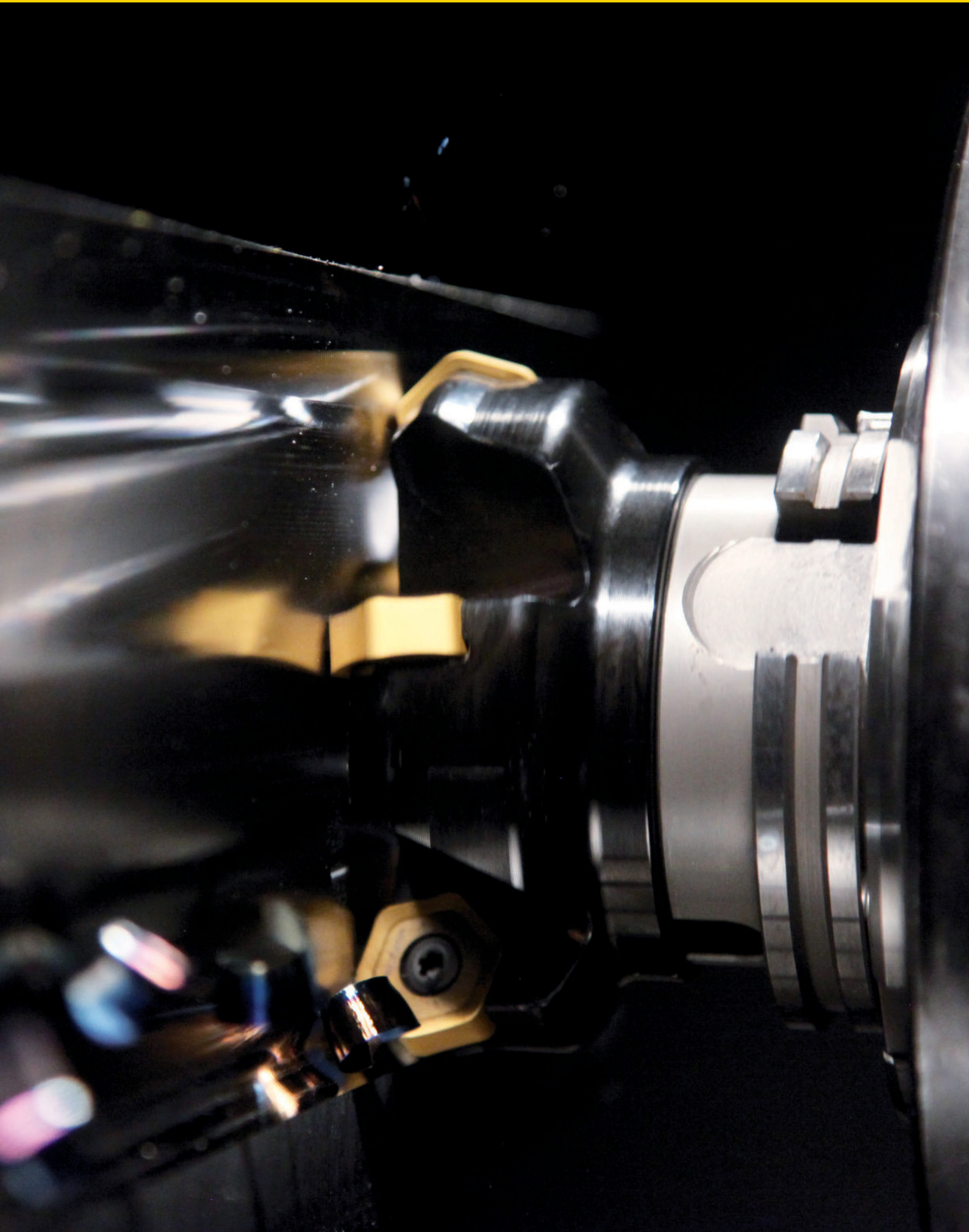
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Dodeka	B4–B5, B16–B20
7745VOD	B22–B26
Shoulder Milling.....	B27–B81
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2.2 Mill 1-10, Mill 1-14.....	B47–B63, B64–B81
High-Feed and Copy Milling	B82–B136
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7792 IC09.....	B92–B100
7792 IC12.....	B101–B109
Dodeka Mini High-Feed 15°	B110–B115
Dodeka High-Feed 15°	B116–B119
3.2 7713 IC10 Copy Milling.....	B120–B126
7713 IC12 Copy Milling.....	B127–B132
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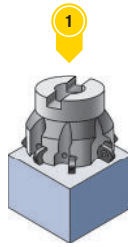
Solid End Milling

Solid End Milling Selection System	B138–B139
High-Performance	B140–B191
4 Duo-Lock HARVI	B140–B147
HARVI I TE.....	B148–B165
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Grades and Grade Descriptions	B212
Workpiece Material Cross Reference	E10





Application

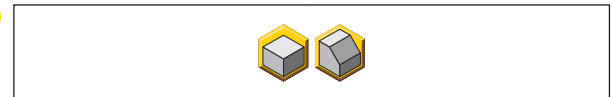
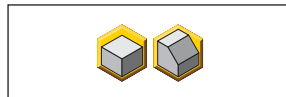


Machining Conditions and Spindle Size

- Small to medium machines.
- Best fit for steep taper 40 / HSK63 and similar spindle sizes.
- Finishing cuts on large machines.

- Medium and large machines.
- Best fit for steep taper 50 / HSK100 and similar spindle sizes.
- Roughing with larger depth of cut and higher feed rates.

Capabilities



Platform

7745 VOD

42° cutter – ap max: 3,5mm
Cutter body: Ø32–Ø125mm
Insert style: OD*0404
8 cutting edges

Dodeka™ Mini

45° cutter – ap max: 3,2 mm
60° cutter – ap max: 4,4 mm
Cutter body: Ø25–Ø125mm
Insert style: HN*J0604
12 cutting edges

Dodeka

45° cutter – ap max: 4,5 mm
Cutter body: Ø50–Ø250mm
Insert style: HN*J0905
12 cutting edges

Insert Selection

Easy insert selection based on:

- Workpiece material
- Cutting conditions
- Coolant type
- Directly on the product page B24

Easy insert selection based on:

- Workpiece material
- Cutting conditions
- Coolant type
- Directly on the product pages B9 and B13

Easy insert selection based on:

- Workpiece material
- Cutting conditions
- Coolant type
- Directly on the product page B18

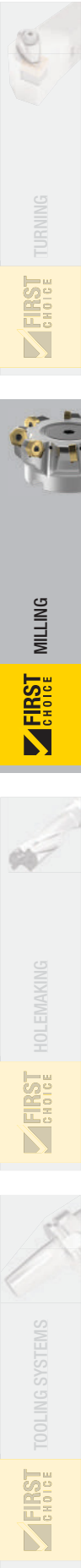
Tech Tips:

*Use 7745VOD for lowest cutting forces and improved chip evacuation. Suitable for unstable applications/fixtures.

*7745VOD is the preferred platform for finishing stainless steel and high-temp materials.

*Coarse pitch cutters are suggested for unstable applications/fixtures and long chipping materials.

*For cutter diameter selection, it is important to consider the torque value of the machine.



➤ Dodeka™ Series

Leader in Advanced Face Milling Applications

Primary Application

Dodeka Mini and Dodeka platforms are the most comprehensive face milling boosters on the market today. Twelve true cutting edges per insert mean low cost-per-edge and high productivity. With Beyond™ premium milling grades, achieve up to 30% higher metal removal rates (MRR), 25% lower cutting forces due to soft cutting action, and up to 35% better tool life in light to heavy machining.

Features and Benefits

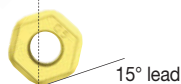
Dodeka Series • Most comprehensive face milling platform on the market. Providing an excellent cost-per-cutting edge with market leading performance. The Dodeka Series platform will cover all your face milling application needs.

All cutter body variations can be loaded with one insert style.

**Dodeka Mini High-Feed 15°
Dodeka High-Feed 15°**



12 True
Cutting
Edges



Dodeka Mini Ap1 max = 1,6mm
Dodeka Ap1 max = 2,2mm

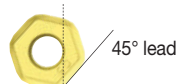
Dodeka Mini HF and Dodeka HF can be loaded with all Dodeka Mini standard inserts, except wiper inserts.

See High-Feed section, pages B110–B119.

**Dodeka Mini 45°
Dodeka 45°**



12 True
Cutting
Edges



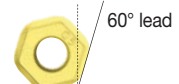
Dodeka Mini Ap1 max = 3,2mm
Dodeka Ap1 max = 4,5mm

Best-in-class leader in face milling up to Ap1 max = 4,5mm.

Dodeka Mini 60°



12 True
Cutting
Edges



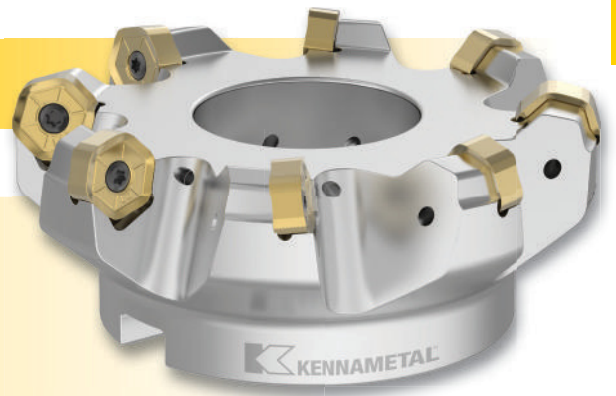
Dodeka Mini Ap1 max = 4,4mm

Achieve a higher axial depth-of-cut capability up to Ap1 = 4,4mm with standard Dodeka Mini inserts.



Dodeka™ Mini Series

insert size HN.J06
 $A_{p1} \text{ max} = 4,4\text{mm}$
 (for approach angle 60°)



Dodeka

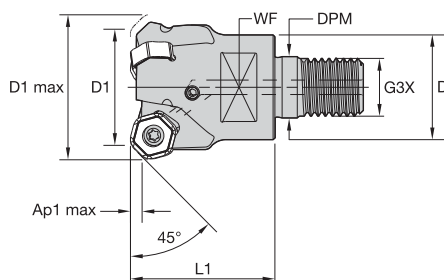
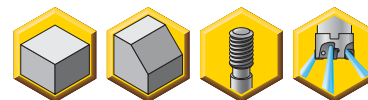
insert size HN.J0905
 $A_{p1} \text{ max} = 4,5\text{mm}$



Applicable in most material groups • Excellent results in machining titanium



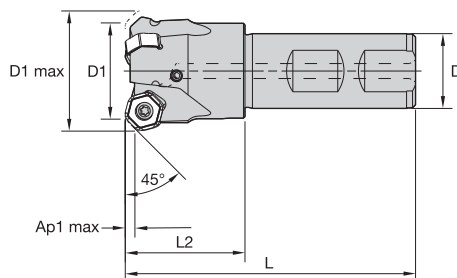
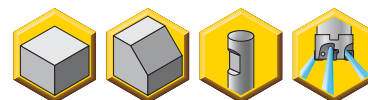
- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.



■ Dodeka Mini 45° • Screw-On End Mills

order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4125882	KSHR025D03M16HN06	25	33,2	29	17,0	M16	32,0	22	3,2	3	0,13	20000
4126344	KSHR032D04M16HN06	32	40,2	29	17,0	M16	40,0	22	3,2	4	0,21	17600

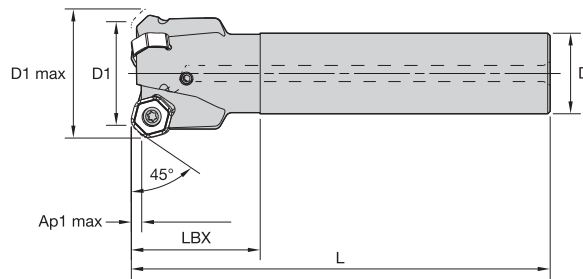
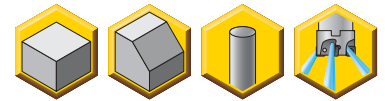
- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.



■ Dodeka Mini 45° • Weldon End Mills

order number	catalogue number	D1	D1 max	D	L	L2	Ap1 max	Z	kg	max RPM
4126348	KSHR025D03B20HN06	25	33,2	20	82	32	3,2	3	0,21	20000
4126349	KSHR032D03B25HN06	32	40,2	25	97	40	3,2	3	0,40	17600
4126350	KSHR032D04B25HN06	32	40,2	25	97	40	3,2	4	0,41	17600

- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.



■ Dodeka Mini 45° • Cylindrical End Mills

order number	catalogue number	D1	D1 max	D	L	LBX	Ap1 max	Z	kg	max RPM
4126352	KSHR025D03A20HN06L120	25	33,2	20	120	32	3,2	3	0,28	20000
4126383	KSHR032D03A25HN06L130	32	40,2	25	130	40	3,2	3	0,50	17600
4126384	KSHR032D04A25HN06L130	32	40,2	25	130	40	3,2	4	0,50	17600

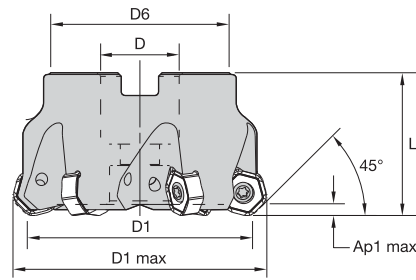
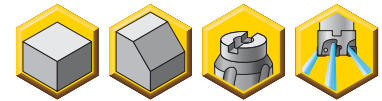
■ Spare Parts



D1	insert screw	Nm	wrench
25	193.492	3,5	170.025
32	193.492	3,5	170.025



- Twelve cutting edges per insert.
- Maximum number of teeth per diameter.
- Productivity booster in all materials.



■ Dodeka Mini 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4126387	KSHR040A04RS45HN06	40	48,2	22	38	40	3,2	4	0,25	15800
4124313	KSHR040A05RS45HN06	40	48,2	22	38	40	3,2	5	0,25	15800
4126388	KSHR050A04RS45HN06	50	58,2	22	38	40	3,2	4	0,36	12700
4122886	KSHR050A05RS45HN06	50	58,2	22	38	40	3,2	5	0,37	12700
4126389	KSHR050A06RS45HN06	50	58,2	22	38	40	3,2	6	0,36	12700
4122887	KSHR063A04RS45HN06	63	71,2	22	50	40	3,2	4	0,59	10100
4122889	KSHR063A06RS45HN06	63	71,2	22	50	40	3,2	6	0,65	10100
4126390	KSHR063A08RS45HN06	63	71,2	22	50	40	3,2	8	0,64	10100
4126391	KSHR080A05RS45HN06	80	88,1	27	60	50	3,2	5	1,13	7900
4126392	KSHR080A08RS45HN06	80	88,1	27	64	50	3,2	8	1,25	7900
4126403	KSHR080A10RS45HN06	80	88,1	27	60	50	3,2	10	1,19	7900
4126404	KSHR100B06RS45HN06	100	108,1	32	80	50	3,2	6	1,73	6300
4126405	KSHR100B09RS45HN06	100	108,1	32	80	50	3,2	9	1,84	6300
4126406	KSHR100B12RS45HN06	100	108,1	32	80	50	3,2	12	1,84	6300
4126408	KSHR125B12RS45HN06	125	133,1	40	90	63	3,2	12	2,98	5050
4124262	KSHR125B16RS45HN06	125	133,1	40	90	63	3,2	16	3,05	5050

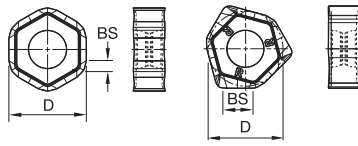
■ Spare Parts



D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
40	193.492	3,5	170.025	125.025	—	—	—
50	193.492	3,5	170.025	125.025	—	—	—
63	193.492	3,5	170.025	125.025	—	—	—
80	193.492	3,5	170.025	125.230	—	—	—
100	193.492	3,5	170.025	—	MS2189C	—	—
125	193.492	3,5	170.025	—	—	420.200	470.232

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2					◇/◆	◆◆		◇◇			
P3-P4					◇/◆	◆◆		◇	◇◇		
P5-P6					◇/◆	◆◆		◇	◇◇		
M1-M2					◇/◆	◆			◆	◆◆	
M3					◇/◆	◆				◆◆	
K1-K2		◇	◆◆					◇◇			
K3		◇	◆◆					◇◇			
N1	◆◆										
N2	◆◆										
S1						◆					◆◆
S2						◆					◆◆
S3					◆	◆					◆◆
S4					◆	◆					◆◆



ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
HNGJ0604ANFNLDJ	12	1,54	4121575	-	-	-	-	-	-	-	-
HNGJ0604ANENLD	12	1,54	-	4121576	-	4121578	-	4119227	4119190	5550701	6165862



General Machining											
HNPJ0604ANSNGD	12	1,45	-	-	4119696	4119697	4119701	4119699	4119700	5550703	6165759



Heavy Machining											
HNGJ0604ANSNHD	12	1,45	-	-	-	-	-	6039660	6039812	6039659	6165864
HNPJ0604ANSNHD	12	1,45	-	-	-	4119703	4119229	-	4119228	5550702	6165760
HNPJ060432ANSNHD	12	-	-	-	-	-	-	-	-	6068798	6165861



Finishing with Wiper											
XNGJ0604ANENLD3W	12	4,80	-	-	-	4121607	-	-	-	5879813	6165863

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%		10%		20%		30%		40-100%							
.F..LDJ	0,17	0,46	0,79	0,12	0,33	0,57	0,09	0,25	0,43	0,08	0,22	0,37	0,07	0,20	0,34	.F..LDJ
.E..LD	0,18	0,59	0,99	0,13	0,43	0,71	0,10	0,32	0,53	0,09	0,28	0,46	0,08	0,25	0,42	.E..LD
.S..GD	0,33	0,79	1,19	0,24	0,57	0,86	0,18	0,43	0,64	0,16	0,37	0,56	0,14	0,34	0,51	.S..GD
.S..HD	0,33	0,84	1,35	0,24	0,60	0,97	0,18	0,45	0,72	0,16	0,39	0,63	0,14	0,36	0,57	.S..HD

HNG.....: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.

HNP.....: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.

XNG.....: Wiper finishing insert. To be used in combination with HNGJ..LD insert.





Material Group		KC410M *			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	395	340	325	310	275	260	
	2	-	-	-	-	-	-	-	-	330	290	240	265	230	190	
	3	-	-	-	-	-	-	-	-	305	260	210	240	205	170	
	4	-	-	-	295	240	205	-	-	-	270	220	180	215	180	145
	5	-	-	-	-	-	-	-	-	-	220	205	180	180	160	145
	6	-	-	-	-	-	-	-	-	-	200	150	120	155	120	95
M	1	-	-	-	-	-	-	-	-	245	215	200	205	180	160	
	2	-	-	-	-	-	-	-	-	220	190	155	185	155	130	
	3	-	-	-	-	-	-	-	-	170	145	115	140	120	95	
K	1	-	-	-	355	320	290	325	295	260	275	245	220	-	-	
	2	-	-	-	275	245	230	250	230	210	215	190	180	-	-	
	3	-	-	-	235	210	190	210	190	175	180	160	145	-	-	
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	1	-	-	-	190	155	110	-	-	-	145	110	85	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	545	475	445	355	310	295	275	240	205
	2	-	-	-	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	275	245	275	235	190	205	180	160
	4	-	-	-	230	210	190	245	205	160	180	160	145
	5	-	-	-	310	275	250	205	185	160	160	145	125
	6	-	-	-	190	160	145	180	140	110	125	110	90
M	1	-	-	-	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	170	210	180	150	180	145	125
	3	-	-	-	175	155	140	155	140	110	145	125	110
K	1	505	460	410	355	320	290	-	-	-	-	-	-
	2	400	355	330	280	250	230	-	-	-	-	-	-
	3	335	300	275	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness increases, the speed should be decreased.

Dry
Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	-	315	270	260	250	220	210
	2	-	-	-	-	-	-	-	-	-	265	230	190	210	185	150
	3	-	-	-	-	-	-	-	-	-	245	210	170	190	165	135
	4	-	-	-	235	190	165	-	-	-	215	175	145	170	145	115
	5	-	-	-	-	-	-	-	-	-	175	165	145	145	130	115
	6	-	-	-	-	-	-	-	-	-	160	120	95	125	95	75
M	1	-	-	-	-	-	-	-	-	-	195	170	160	165	145	130
	2	-	-	-	-	-	-	-	-	-	175	150	125	150	125	105
	3	-	-	-	-	-	-	-	-	-	135	115	90	110	95	75
K	1	-	-	-	285	255	230	260	235	210	220	195	175	-	-	-
	2	-	-	-	220	195	185	200	185	170	170	150	145	-	-	-
	3	-	-	-	190	170	150	170	150	140	145	130	115	-	-	-
N	1	1170	1035	955	615	550	505	-	-	-	-	-	-	-	-	-
	2	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
	3	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	2	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	3	-	-	-	-	-	-	-	-	-	50	40	25	45	30	25
	4	-	-	-	-	-	-	-	-	-	70	50	30	50	45	30
H	1	-	-	-	150	125	90	-	-	-	115	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

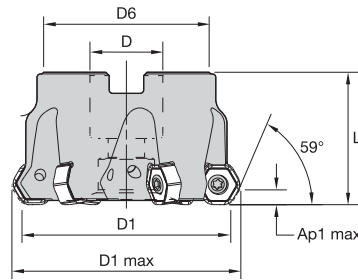
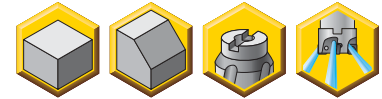
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	435	380	355	285	250	235	-	-	-
	2	-	-	-	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	220	195	220	190	150	-	-	-
	4	-	-	-	185	170	150	195	165	130	-	-	-
	5	-	-	-	250	220	200	165	150	130	165	140	115
	6	-	-	-	150	130	118	145	110	90	145	105	75
M	1	-	-	-	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	135	170	145	120	170	140	115
	3	-	-	-	140	125	110	125	110	90	140	105	80
K	1	405	370	330	285	255	230	-	-	-	-	-	-
	2	320	285	265	225	200	185	-	-	-	-	-	-
	3	270	240	220	190	170	150	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	40	30	25
	2	-	-	-	-	-	-	40	30	30	40	30	25
	3	-	-	-	-	-	-	50	40	30	50	40	25
	4	-	-	-	65	50	30	65	50	30	55	50	30
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in bold type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



- Twelve cutting edges per insert.
- Higher A_{p1} max with standard inserts.
- Productivity booster in all materials.



■ Dodeka Mini 60° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4147022	KSHR040A04RS60HN06	40	46,4	22	38	40	4,3	4	0,21	15800
4147713	KSHR040A05RS60HN06	40	46,4	22	38	40	4,3	5	0,21	15800
4147714	KSHR050A04RS60HN06	50	56,4	22	38	40	4,3	4	0,32	12700
4147715	KSHR050A05RS60HN06	50	56,4	22	38	40	4,3	5	0,32	12700
4147716	KSHR063A04RS60HN06	63	69,3	22	50	40	4,3	4	0,57	10100
4147717	KSHR063A06RS60HN06	63	69,3	22	50	40	4,3	6	0,59	10100
4147718	KSHR080A05RS60HN06	80	86,3	27	60	50	4,3	5	1,08	7900
4147719	KSHR080A08RS60HN06	80	86,3	27	60	50	4,3	8	1,15	7900
4147720	KSHR100B06RS60HN06	100	106,3	32	80	50	4,3	6	1,70	6300
4147722	KSHR125B08RS60HN06	125	131,3	40	90	63	4,3	8	2,92	5050

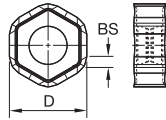
■ Spare Parts



D1	insert screw	Nm	wrench	mounting screw	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
40	193.492	3,5	170.025	KLSSM22-39-CG	—	—	—	—
50	193.492	3,5	170.025	—	125.025	—	—	—
63	193.492	3,5	170.025	—	125.025	—	—	—
80	193.492	3,5	170.025	—	125.230	—	—	—
100	193.492	3,5	170.025	—	—	MS2189C	—	—
125	193.492	3,5	170.025	—	—	—	420.200	470.232

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2						◇/◆	◆◆		◇◇			
P3-P4						◇/◆	◆◆		◇	◇◇		
P5-P6						◇/◆	◆◆		◇	◇◇		
M1-M2						◇/◆	◆			◆		◆◆
M3						◇/◆	◆					◆◆
K1-K2		◇	◆◆					◇◇				
K3		◇	◆◆						◇◇			
N1	◆◆											
N2	◆◆											
S1							◆					◆◆
S2							◆					◆◆
S3						◆	◆					◆◆
S4						◆	◆					◆◆



ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40	
Light Machining												
HNGJ0604ANFNLDJ	12	1,54	4121575	-	-	-	-	-	-	-	-	
HNGJ0604ANENLD	12	1,54	-	4121576	-	4121578	-	4119227	4119190	5550701	6165862	



General Machining												
HNPJ0604ANSNGD	12	1,45	-	-	4119696	4119697	4119701	4119699	4119700	5550703	6165759	



Heavy Machining												
HNGJ0604ANSNHD	12	1,45	-	-	-	-	-	6039660	6039812	6039659	6165864	
HNPJ0604ANSNHD	12	1,45	-	-	-	4119703	4119229	-	4119228	5550702	6165760	
HNPJ060432ANSNHD	12	-	-	-	-	-	-	-	-	6068798	6165861	

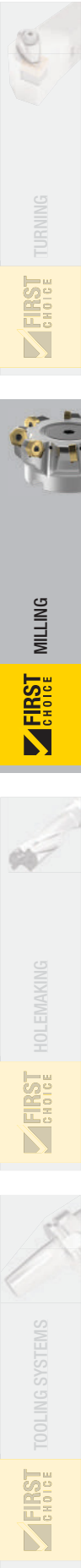
Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,13	0,37	0,64	0,10	0,27	0,46	0,07	0,20	0,35	0,06	0,18	0,30	0,06	0,16	0,28	.F..LDJ
.E..LD	0,15	0,48	0,81	0,11	0,35	0,58	0,08	0,26	0,43	0,07	0,23	0,38	0,07	0,21	0,35	.E..LD
.S..GD	0,27	0,64	0,97	0,20	0,46	0,70	0,15	0,35	0,52	0,13	0,30	0,45	0,12	0,28	0,42	.S..GD
.S..HD	0,27	0,68	1,10	0,20	0,49	0,79	0,15	0,37	0,59	0,13	0,32	0,51	0,12	0,29	0,47	.S..HD

HNG.....: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
HNP.....: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.





Material Group		KC410M*			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	395	340	325	310	275	260	
	2	-	-	-	-	-	-	-	-	330	290	240	265	230	190	
	3	-	-	-	-	-	-	-	-	305	260	210	240	205	170	
	4	-	-	-	295	240	205	-	-	270	220	180	215	180	145	
	5	-	-	-	-	-	-	-	-	220	205	180	180	160	145	
	6	-	-	-	-	-	-	-	-	200	150	120	155	120	95	
M	1	-	-	-	-	-	-	-	-	245	215	200	205	180	160	
	2	-	-	-	-	-	-	-	-	220	190	155	185	155	130	
	3	-	-	-	-	-	-	-	-	170	145	115	140	120	95	
K	1	-	-	-	355	320	290	325	295	260	275	245	220	-	-	
	2	-	-	-	275	245	230	250	230	210	215	190	180	-	-	
	3	-	-	-	235	210	190	210	190	175	180	160	145	-	-	
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	1	-	-	-	190	155	110	-	-	-	145	110	85	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	545	475	445	355	310	295	275	240	205
	2	-	-	-	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	275	245	275	235	190	205	180	160
	4	-	-	-	230	210	190	245	205	160	180	160	145
	5	-	-	-	310	275	250	205	185	160	160	145	125
	6	-	-	-	190	160	145	180	140	110	125	110	90
M	1	-	-	-	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	170	210	180	150	180	145	125
	3	-	-	-	175	155	140	155	140	110	145	125	110
K	1	505	460	410	355	320	290	-	-	-	-	-	-
	2	400	355	330	280	250	230	-	-	-	-	-	-
	3	335	300	275	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.
NOTE: FIRST choice starting speeds are in **bold type**.
As the average chip thickness increases, the speed should be decreased.

Dry
Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	-	315	270	260	250	220	210
	2	-	-	-	-	-	-	-	-	-	265	230	190	210	185	150
	3	-	-	-	-	-	-	-	-	-	245	210	170	190	165	135
	4	-	-	-	235	190	165	-	-	-	215	175	145	170	145	115
	5	-	-	-	-	-	-	-	-	-	175	165	145	145	130	115
	6	-	-	-	-	-	-	-	-	-	160	120	95	125	95	75
M	1	-	-	-	-	-	-	-	-	-	195	170	160	165	145	130
	2	-	-	-	-	-	-	-	-	-	175	150	125	150	125	105
	3	-	-	-	-	-	-	-	-	-	135	115	90	110	95	75
K	1	-	-	-	285	255	230	260	235	210	220	195	175	-	-	-
	2	-	-	-	220	195	185	200	185	170	170	150	145	-	-	-
	3	-	-	-	190	170	150	170	150	140	145	130	115	-	-	-
N	1	1170	1035	955	615	550	505	-	-	-	-	-	-	-	-	-
	2	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
	3	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	2	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	3	-	-	-	-	-	-	-	-	-	50	40	25	45	30	25
	4	-	-	-	-	-	-	-	-	-	70	50	30	50	45	30
H	1	-	-	-	150	125	90	-	-	-	115	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

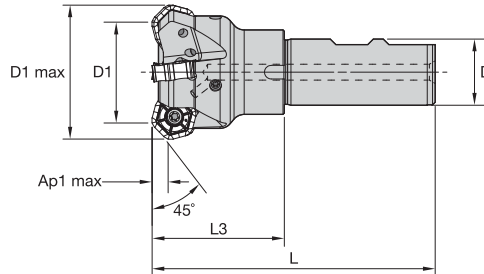
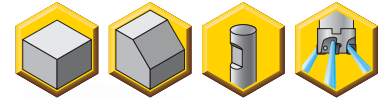
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	435	380	355	285	250	235	-	-	-
	2	-	-	-	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	220	195	220	190	150	-	-	-
	4	-	-	-	185	170	150	195	165	130	-	-	-
	5	-	-	-	250	220	200	165	150	130	165	140	115
	6	-	-	-	150	130	120	145	110	90	145	105	75
M	1	-	-	-	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	135	170	145	120	170	140	115
	3	-	-	-	140	125	110	125	110	90	140	105	80
K	1	405	370	330	285	255	230	-	-	-	-	-	-
	2	320	285	265	225	200	185	-	-	-	-	-	-
	3	270	240	220	190	170	150	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	40	30	25
	2	-	-	-	-	-	-	40	30	30	40	30	25
	3	-	-	-	-	-	-	50	40	30	50	40	25
	4	-	-	-	65	50	30	65	50	30	55	50	30
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



- Twelve cutting edges per insert.
- Soft cutting action.
- Through tool coolant.



■ Dodeka 45° • Weldon End Mills

order number	catalogue number	D1	D1 max	D	L	L3	Ap1 max	Z	kg	max RPM
3324830	KSHR40D04R50B25SHN09	40	51,0	25	107	50,00	4,5	4	0,52	15800

■ Spare Parts

D1	insert screw	Nm	wrench
40	193.492	3,5	170.025

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

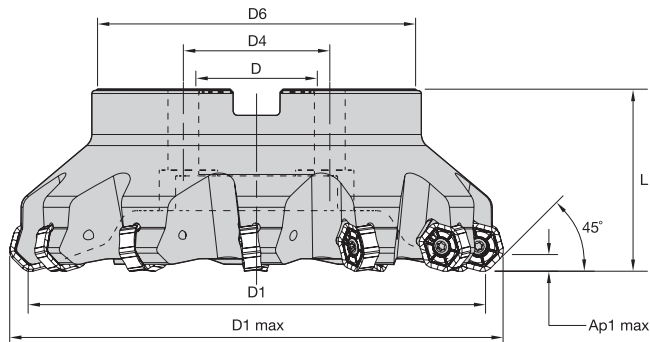
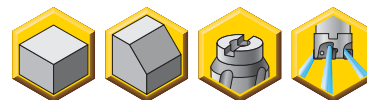
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

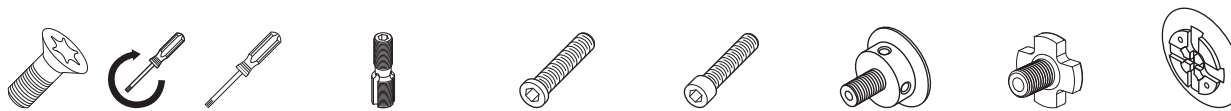
- Twelve cutting edges per insert.
- Through coolant standard.
- Soft cutting action.



■ Dodeka 45° • Shell Mills

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
3324831	KSHR50A04RS45HN09	50	61,0	22	—	38	40	4,5	4	0,32	12700
3324832	KSHR50A05RS45HN09	50	61,0	22	—	38	40	4,5	5	0,33	12700
3749959	KSHR63A05RS45HN09	63	74,0	22	—	50	40	4,5	5	0,60	10100
3325163	KSHR63A06RS45HN09	63	74,0	22	—	50	40	4,5	6	0,56	10100
3325164	KSHR63A07RS45HN09	63	74,0	22	—	50	40	4,5	7	0,57	10100
3749960	KSHR80A05RS45HN09	80	91,0	27	—	60	50	4,5	5	1,12	7900
3325165	KSHR80A06RS45HN09	80	91,0	27	—	60	50	4,5	6	1,07	7900
3325166	KSHR80A09RS45HN09	80	91,0	27	—	60	50	4,5	9	1,11	7900
3749961	KSHR100B06RS45HN09	100	111,0	32	—	80	50	4,5	6	1,73	6300
3325167	KSHR100B08RS45HN09	100	111,0	32	—	80	50	4,5	8	1,68	6300
3325168	KSHR100B11RS45HN09	100	111,0	32	—	80	50	4,5	11	1,73	6300
3749962	KSHR125B08RS45HN09	125	135,9	40	—	90	63	4,5	8	2,84	5050
3325169	KSHR125B10RS45HN09	125	135,9	40	—	90	63	4,5	10	2,77	5050
3325170	KSHR125B14RS45HN09	125	136,0	40	—	90	63	4,5	14	2,86	5050
3750013	KSHR160C10RS45HN09	160	171,0	40	67	110	63	4,5	10	4,75	3900
3325171	KSHR160C12RS45HN09	160	171,0	40	67	110	63	4,5	12	4,56	3900
3325172	KSHR160C16RS45HN09	160	171,0	40	67	110	63	4,5	16	4,70	3900
3587732	KSHR200C16RS45HN09	200	211,0	60	102	130	63	4,5	16	6,43	3180
3587753	KSHR250C20RS45HN09	250	261,0	60	102	130	63	4,5	20	9,93	2550

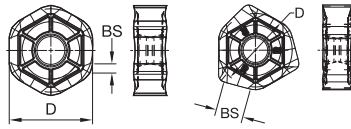
■ Spare Parts



D1	insert screw	Nm	wrench	mounting screw with coolant grooves	low-head cap screw	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
50	193.492	3,5	170.025	MS2072CG	129.025	—	—	—	—
63	193.492	3,5	170.025	MS1234CG	—	125.025	—	—	—
80	193.492	3,5	170.025	MS2038CG	—	125.230	—	—	—
100	193.492	3,5	170.025	—	—	—	MS2189C	—	—
125	193.492	3,5	170.025	—	—	—	—	420.200	470.232
160	193.492	3,5	170.025	—	—	—	—	420.200	470.233
200	193.492	3,5	170.025	—	—	—	—	—	470.234
250	193.492	3,5	170.025	—	—	—	—	—	470.235

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2			◇/◆	◆◆		◇◇						
P3-P4			◇/◆	◆◆		◇	◇◇					
P5-P6			◇/◆	◆◆		◇	◇◇					
M1-M2			◇/◆	◆			◆	◆◆				
M3			◇/◆	◆				◆◆				
K1-K2		◆◆				◇◇					◇◇	
K3		◆◆				◇◇						
N1	◆◆											
N2	◆◆											
S1				◆						◆◆		
S2				◆						◆◆		
S3				◆	◆					◆◆		
S4				◆	◆					◆◆		

ISO catalogue number	D	BS	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40	KY3500
Light Machining											
HNGJ0905ANFLDJ	16	1,80	3849320	-	-	-	-	-	-	-	-
HNGJ0905ANENLD	16	1,80	-	3331174	3093561	3331175	3330952	3331178	-	6178103	-

General Machining											
HNGJ0905ANSNGD	16	1,80	-	-	-	3331176	3331173	3093719	5550793	6178104	-
HNPJ0905ANSNGD	16	1,80	-	3763726	3774250	3763727	3763725	3763728	5550795	-	-

Heavy Machining											
HNGJ0905ANSNHD	16	1,66	-	-	-	3556331	3556330	3556332	5550794	6178105	-
HNPJ0905ANSNHD	16	1,66	-	-	3774249	3763723	3763185	3763724	5550796	6178108	-
HNPJ090543ANSNHD	16	-	-	-	3774251	3763730	3763729	3763731	5550797	6178109	-
HNGJ090543ANSNHD	16	-	-	-	-	3556374	3556373	3556375	6068043	6178106	-

Finishing with Wiper											
XNGJ0905ANSNGD3W	16	6,00	-	-	-	3547033	3547022	3547035	-	6178107	-

High Speed Cast Iron Machining											
HNEC0905ANSN	16	1,95	-	-	-	-	-	-	-	-	6140064

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,17	0,46	0,79	0,12	0,33	0,57	0,09	0,25	0,43	0,08	0,22	0,37	0,07	0,20	0,34	.F..LDJ
.E..LD	0,23	0,66	0,99	0,17	0,47	0,71	0,13	0,35	0,53	0,11	0,31	0,46	0,10	0,28	0,42	.E..LD
.S..GD	0,33	0,72	1,15	0,24	0,52	0,82	0,18	0,39	0,61	0,16	0,34	0,54	0,14	0,31	0,49	.S..GD
.S..HD	0,33	0,84	1,35	0,24	0,60	0,97	0,18	0,45	0,72	0,16	0,39	0,63	0,14	0,36	0,57	.S..HD

HNG.....: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.

HNP.....: Pressed inserts; lower cost per edge for most roughing to semi-finishing operations.

XNG.....: Wiper finishing insert. To be used in combination with HNGJ..LD insert.

Material Group		KC410M*	KC520M	KC522M	KC725M	KCK15
P	1	- - -	- - -	395 340 325	310 275 260	- - -
	2	- - -	- - -	330 290 240	265 230 190	- - -
	3	- - -	- - -	305 260 210	240 205 170	- - -
	4	- - -	- - -	270 220 180	215 180 145	- - -
	5	- - -	- - -	220 205 180	180 160 145	- - -
	6	- - -	- - -	200 150 120	155 120 95	- - -
M	1	- - -	- - -	245 215 200	205 180 160	- - -
	2	- - -	- - -	220 190 155	185 155 130	- - -
	3	- - -	- - -	170 145 115	140 120 95	- - -
K	1	- - -	325 295 260	275 245 220	- - -	505 460 410
	2	- - -	250 230 210	215 190 180	- - -	400 355 330
	3	- - -	210 190 175	180 160 145	- - -	335 300 275
N	1	- - -	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -
S	1	- - -	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -
	4	- - -	- - -	- - -	- - -	- - -
H	1	- - -	- - -	145 110 85	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -

Material Group		KCPK30	KCPM40	KCSM40	KY3500
P	1	545 475 445	355 310 295	275 240 205	- - -
	2	335 305 275	300 260 215	240 205 160	- - -
	3	305 275 245	275 235 190	205 180 160	- - -
	4	230 210 190	245 205 160	180 160 145	- - -
	5	310 275 250	205 185 160	160 145 125	- - -
	6	190 160 145	180 140 110	125 110 90	- - -
M	1	245 220 185	235 205 185	275 220 180	- - -
	2	220 190 170	210 180 150	180 145 125	- - -
	3	175 155 140	155 140 110	145 125 110	- - -
K	1	355 320 290	- - -	- - -	965 875 780
	2	280 250 230	- - -	- - -	760 685 635
	3	235 210 190	- - -	- - -	- - -
N	1	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -
S	1	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -
	4	- - -	- - -	- - -	- - -
H	1	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in bold type.

As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



Material Group		KC410M			KC520M			KC522M			KC725M			KCK15		
P	1	-	-	-	-	-	-	315	270	260	250	220	210	-	-	-
	2	-	-	-	-	-	-	265	230	190	210	185	150	-	-	-
	3	-	-	-	-	-	-	245	210	170	190	165	135	-	-	-
	4	-	-	-	-	-	-	215	175	145	170	145	115	-	-	-
	5	-	-	-	-	-	-	175	165	145	145	130	115	-	-	-
	6	-	-	-	-	-	-	160	120	95	125	95	75	-	-	-
M	1	-	-	-	-	-	-	195	170	160	165	145	130	-	-	-
	2	-	-	-	-	-	-	175	150	125	150	125	105	-	-	-
	3	-	-	-	-	-	-	135	115	90	110	95	75	-	-	-
K	1	-	-	-	260	235	210	220	195	175	-	-	-	405	370	330
	2	-	-	-	200	185	170	170	150	145	-	-	-	320	285	265
	3	-	-	-	170	150	140	145	130	115	-	-	-	270	240	220
N	1	1170	1035	955	-	-	-	-	-	-	-	-	-	-	-	-
	2	1035	955	880	-	-	-	-	-	-	-	-	-	-	-	-
	3	1035	955	880	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	25	30	30	25	-	-	-
	2	-	-	-	-	-	-	40	30	25	30	30	25	-	-	-
	3	-	-	-	-	-	-	50	40	25	45	30	25	-	-	-
	4	-	-	-	-	-	-	70	50	30	50	45	30	-	-	-
H	1	-	-	-	-	-	-	115	90	70	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCPK30			KCPM40			KCSM40			KY3500*		
P	1	435	380	355	285	250	235	-	-	-	-	-	-
	2	270	245	220	240	210	170	-	-	-	-	-	-
	3	245	220	195	220	190	150	-	-	-	-	-	-
	4	185	170	150	195	165	130	-	-	-	-	-	-
	5	250	220	200	165	150	130	165	140	115	-	-	-
	6	150	130	118	145	110	90	145	105	75	-	-	-
M	1	195	175	150	190	165	150	200	165	135	-	-	-
	2	175	150	135	170	145	120	170	140	115	-	-	-
	3	140	125	110	125	110	90	140	105	80	-	-	-
K	1	285	255	230	-	-	-	-	-	-	-	-	-
	2	225	200	185	-	-	-	-	-	-	-	-	-
	3	190	170	150	-	-	-	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	40	30	30	40	30	25	-	-	-
	2	-	-	-	40	30	30	40	30	25	-	-	-
	3	-	-	-	50	40	30	50	40	25	-	-	-
	4	65	50	30	65	50	30	55	50	30	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for dry machining only.

NOTE: FIRST choice starting speeds are in bold type.

As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

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Numbers shown only serve the originating country listed.



➤ 7745VOD Series

Face Milling Cutter

42° LEAD ANGLE – FACE MILLS

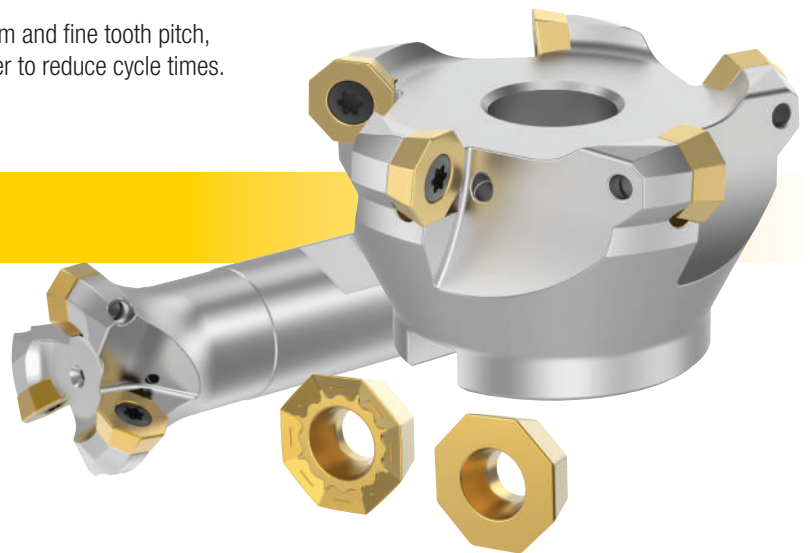
7745VOD cutters are designed for machining most materials. Octagonal inserts offer up to eight economical cutting edges.

These cutters are ideal for roughing, semi-finishing and finishing of Steel, Alloyed Steel, Stainless Steel, High Temperature Alloys, Cast Iron and Aluminium Alloys.

7745VOD cutters are also very robust when machining with tool holder extensions.

They are one of the first choice tools for machining component surface with scale as well as for machining of irregular stock.

Insert sizes: OD..04 available in cutters with medium and fine tooth pitch, giving maximum efficiency and performance in order to reduce cycle times.



Features and Benefits

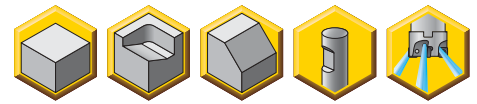
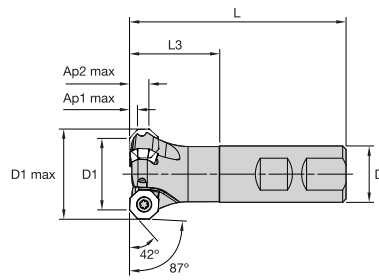
7745VOD

7745VOD04:

Maximum a_p = 3,50mm (8 cutting edges)

Maximum a_p = 8mm (4 cutting edges)

Diameter Range = 32mm to 125mm

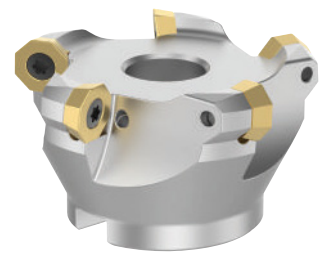
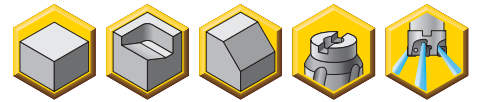
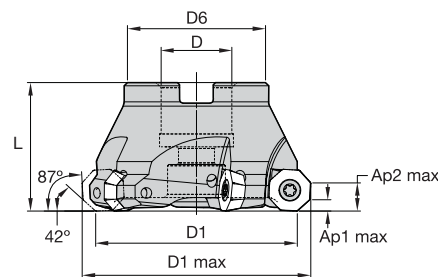


■ End Mill Weldon Shank

order number	catalogue number	D1 max	D1	D	L	L3	Ap1 max	Ap2 max	Z
5672181	7745VOD04WA032R	40	32	25	96	40	3,5	8,0	3

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7745VOD04WA032R	F4011T	3,1	T20

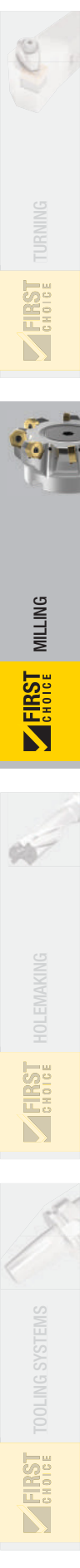


■ Shell Mills

order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Ap2 max	Z
5673810	7745VOD04-A040R	48	40	16	35	35	3,5	8,0	4
5672038	7745VOD04-A050Z6R	58	50	22	45	40	3,5	8,0	6
5671836	7745VOD04-A063R	71	63	22	45	40	3,5	8,0	5
5673700	7745VOD04-A080R	88	80	27	65	50	3,5	8,0	6
5672025	7745VOD04-A100R	108	100	32	80	50	3,5	8,0	7
5672190	7745VOD04-A125R	133	125	40	82	63	3,5	8,0	8

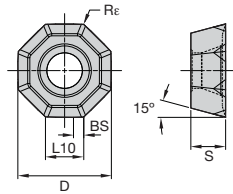
■ Spare Parts

catalogue number	insert screw	Nm	Torx driver	mounting screw	LHCS mounting screw
7745VOD04-A040R	F4011T	3,1	T20	M8 1.25 X 25 SHCS	—
7745VOD04-A050Z6R	F4011T	3,1	T20	M10 1.5 X 25 SHCS	—
7745VOD04-A063R	F4011T	3,1	T20	M10 1.5 X 25 SHCS	—
7745VOD04-A080R	F4011T	3,1	T20	M12 X 1.75 X 30 SHCS	—
7745VOD04-A100R	F4011T	3,1	T20	—	M16X2X40 LHSCS
7745VOD04-A125R	F4011T	3,1	T20	M20 X 2.5 X 50 SHCS	—



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant

P1-P2	◇◇	◇/◆	
P3-P4	◆◆	◇/◆	
P5-P6		◆◆	◇/◆
M1-M2	◇◇	◆◆	
M3	◆	◆◆	
K1-K2	◇◇	◇/◆	
K3	◆◆	◇/◆	
N1			
N2			
S1		◆◆	◆
S2		◆◆	◆
S3		◆◆	
S4		◆	◆◆



ISO catalogue number	D	S	hm	BS	Re	SP6519	X500	X700
Light Machining ODET0404APEN44	12,80	4,76	0,04	1,50	—	5667950	5656499	—



Light Machining ODMT040408EN412	12,80	4,76	0,06	—	0,80	5665818	—	5666904
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General Machining ODMT0404APEN41	12,80	4,76	0,06	1,50	0,20	5661185	5657014	—
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General Machining ODMT040408EN41	12,80	4,76	0,06	—	0,80	5667576	5656811	—
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Heavy Machining ODMW040408SN	12,80	4,76	0,27	—	0,80	5665739	5656555	—
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NOTE: ODMW040408SN X500 should be generally used for heavy duty applications as well as Stainless Steel and High-Temperature Alloys with heavy scale.
Geometry -412 is slightly more positive than -41 and can improve tool life in several applications on Stainless Steel and High Temperature Alloys

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
.E..44	0,14	0,35	0,58	0,10	0,25	0,41	0,08	0,19	0,31	0,07	0,17	0,28	0,06	0,15	0,25	.E..44
.E..412	0,16	0,41	0,69	0,12	0,30	0,50	0,09	0,23	0,38	0,08	0,20	0,33	0,07	0,18	0,30	.E..412
.E..41	0,18	0,51	0,81	0,13	0,36	0,58	0,10	0,28	0,44	0,09	0,24	0,39	0,08	0,22	0,35	.E..41
.S..N	0,46	0,81	1,15	0,33	0,58	0,83	0,25	0,44	0,63	0,22	0,39	0,55	0,20	0,35	0,50	.S..N

Material Group		SP6519			X500			X700		
P	1	355	260	155	325	240	155	-	-	-
	2	310	230	140	290	215	140	-	-	-
	3	275	200	120	250	185	120	-	-	-
	4	210	150	90	190	145	90	-	-	-
	5	170	125	85	155	120	85	160	125	85
	6	145	100	60	130	95	60	140	100	60
M	1	325	235	140	300	220	140	310	230	140
	2	280	205	125	265	190	120	275	205	125
	3	235	170	100	215	155	95	230	170	100
K	1	355	265	170	310	265	205	-	-	-
	2	290	210	130	265	215	155	-	-	-
	3	265	190	120	205	170	120	-	-	-
N	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-

Material Group		SP6519			X500			X700		
P	1	285	210	125	260	190	125	-	-	-
	2	250	185	110	230	170	110	-	-	-
	3	220	160	95	200	150	95	-	-	-
	4	170	120	70	150	115	70	-	-	-
	5	135	100	70	125	95	70	130	100	70
	6	115	80	50	105	75	50	110	80	50
M	1	260	190	110	240	175	110	250	185	110
	2	225	165	100	210	150	95	220	165	100
	3	190	135	80	170	125	75	185	135	80
K	1	285	210	135	250	210	165	-	-	-
	2	230	170	105	210	170	125	-	-	-
	3	210	150	95	165	135	95	-	-	-
N	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
S	1	50	40	25	50	30	25	50	40	25
	2	50	30	20	45	30	20	45	30	20
	3	50	40	25	50	40	25	50	40	25
	4	75	55	35	70	50	30	70	50	35
H	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold type**.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



■ Technical Information (mm)

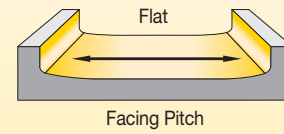
order number	catalogue number	dimension				a _p max helical/linear	max RPM
		facing pitch	ramping angle	helical hole min-max			
5672181	7745VOD04WA032R	32	12,10	60	78	2,00	33200
5673810	7745VOD04-A040R	40	8.50	76	94	2,00	29200
5672038	7745VOD04-A050Z06R	50	6.10	96	114	2,00	25700
5671836	7745VOD04-A063R	63	4.30	122	140	2,00	22700
5673700	7745VOD04-A080R	80	3.00	156	174	2,00	17700
5672025	7745VOD04-A100R	100	2.40	196	214	2,00	17700
5672190	7745VOD04-A125R	125	2.00	246	264	2,00	15700



Ramping



Helical Interpolation



TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

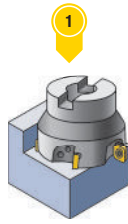
HOLEMAKING

FIRST CHOICE

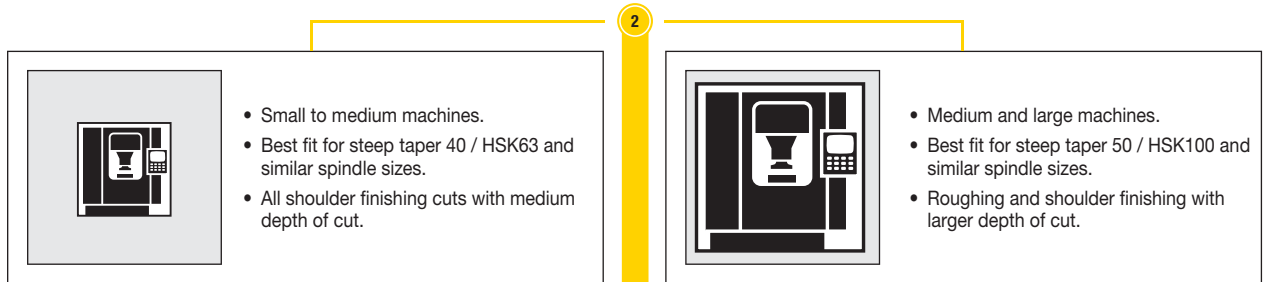
TOOLING SYSTEMS

FIRST CHOICE

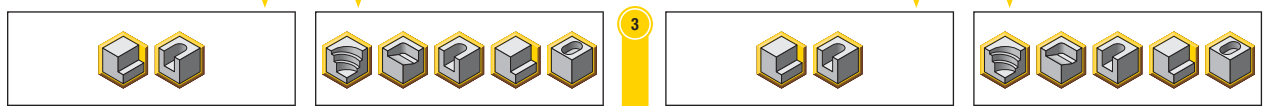
Application



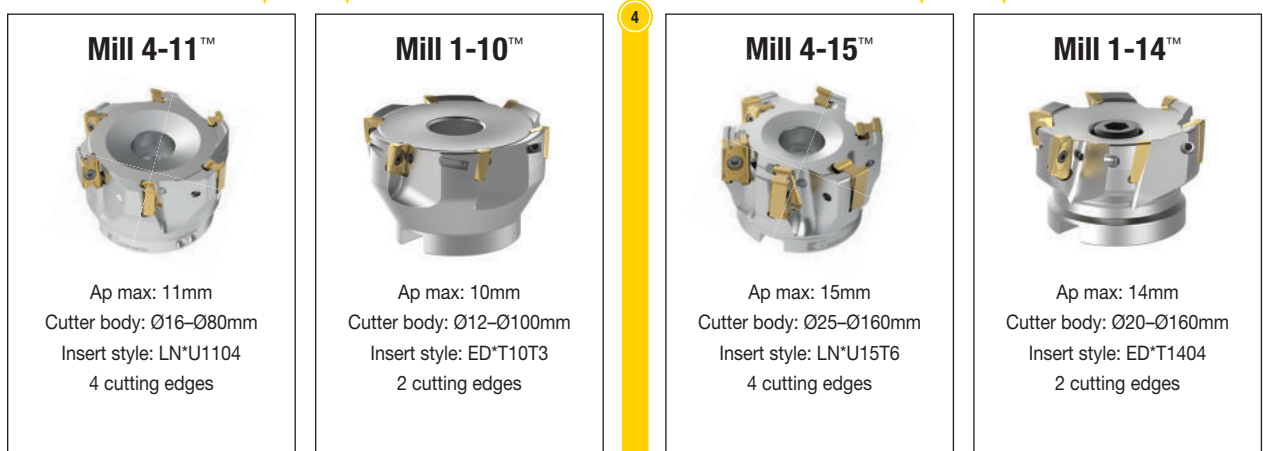
Machining Conditions and Spindle Size



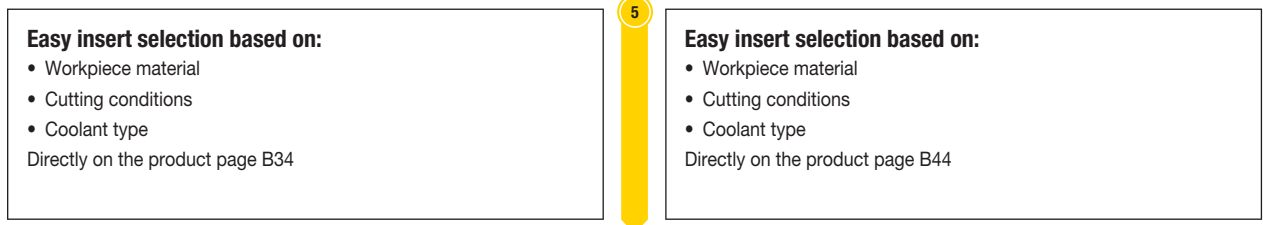
Capabilities



Platform



Insert Selection



Tech Tips:

- Best wall and surface finishing with Mill 4-11 and Mill 4-15 series. “Stepless” solution for multiple-pass operations. For excellent wall finishing results, apply Ap up to ½ length of cutting edge.
- Full ramping, slotting, and plunging capabilities with Mill 1-10 and Mill 1-14.
- Coarse pitch cutters are suggested for large radial engagements. Fine pitch for smooth cuts at low radial engagement and/or stable machining conditions.



➤ Mill 4-11™

One tool for all applications.

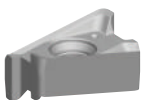
The Mill 4™ series is specially engineered to achieve excellent surface quality and higher metal removal rates in shoulder milling applications. Its unique design allows you to apply the tool in multiple passes (stepping down) with outstanding results.

From roughing to finishing operations, the Mill 4 series is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, non-ferrous materials, and high-temp alloys.

Features and Benefits

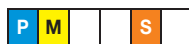
- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- “Stepless” solution for multiple-pass operations.
- Comprehensive offering to cover all applications in all material groups.

-ELEJ



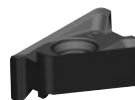
For non-ferrous materials.

-EGE



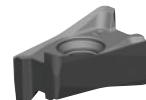
1st choice for stainless steel.
Lower cutting forces.

-SGE



First choice for the Mill 4 platform, especially when machining steels.

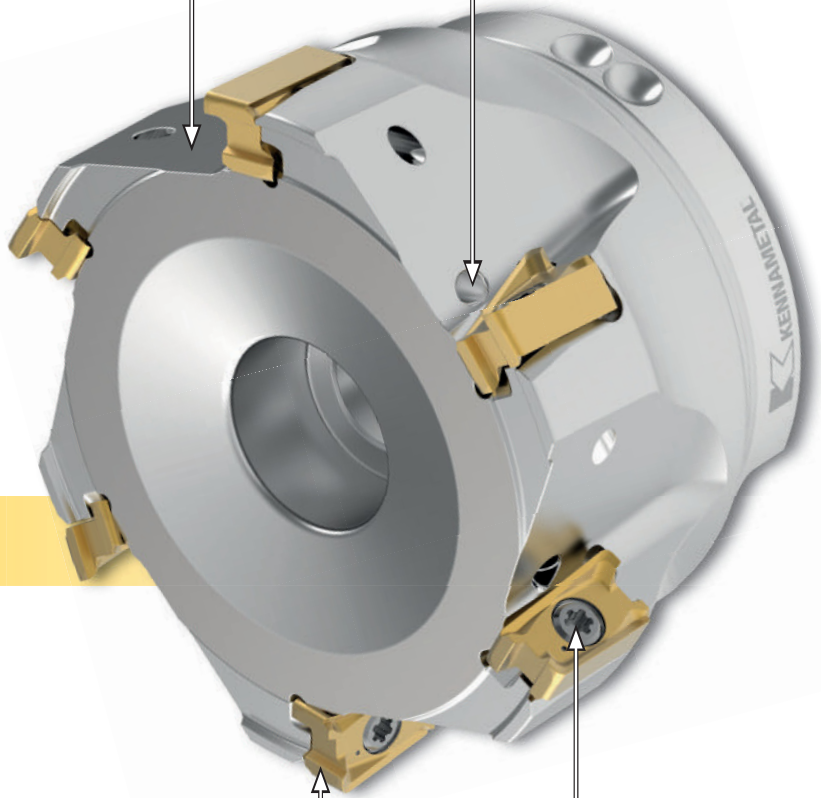
-SGEM



1st choice for cast iron.
Strongest cutting edge.

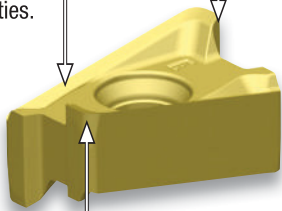
Uneven pocket spacing.

Screw-on, end mills, and shell mill cutter with internal coolant.



Up to 11mm Ap capabilities.

Integrated wiper facet for best-in-class floor finisher.



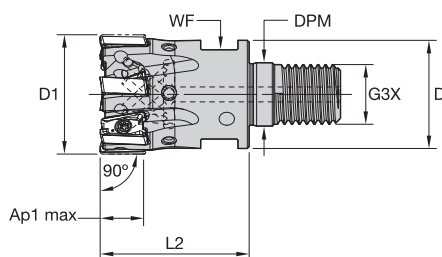
Multiple corner nose radii available from 0,4mm up to 1,6mm.

TP9 insert screw (M3) to provide higher reliability and safe processes.

Double-sided insert with 4 cutting edges.



- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities. Best choice for stepping down operations.
- Up to 11mm depth of cut.
- Screw-on cutters provide better rigidity and stability when used with small spindles: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



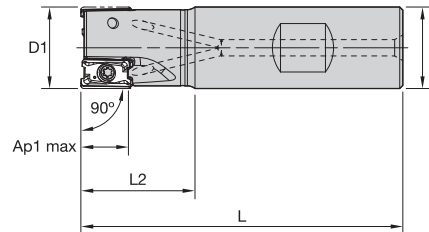
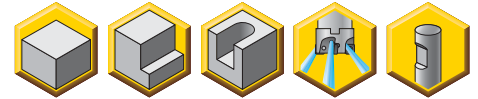
■ Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
6136738	M4D016Z02M08LN11	16	13	8,5	M8	25	10	11,0	2	0,03	48000
6131682	M4D020Z03M10LN11	20	18	10,5	M10	28	15	11,0	3	0,06	40200
6131686	M4D025Z04M12LN11	25	21	12,5	M12	40	17	11,0	4	0,10	34300
6136793	M4D032Z05M16LN11	32	29	17,0	M16	40	24	11,0	5	0,20	29200
6134187	M4D032Z06M16LN11	32	29	17,0	M16	40	24	11,0	6	0,19	29200

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	MS2263	1,5	DT9IP
20	MS2263	1,5	DT9IP
25	MS2263	1,5	DT9IP
32	MS2263	1,5	DT9IP

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



Weldon End Mills

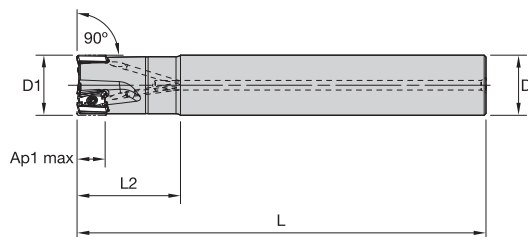
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
6131628	M4D016Z02B16LN11	16	16	74	25	11,0	2	0,09	48000
6131630	M4D020Z02B20LN11	20	20	79	28	11,0	2	0,17	40200
6136740	M4D020Z03B20LN11	20	20	79	28	11,0	3	0,16	42000
6131684	M4D025Z03B25LN11	25	25	89	32	11,0	3	0,29	34300
6134185	M4D032Z04B32LN11	32	32	110	49	11,0	4	0,60	29200
6136795	M4D040Z05B32LN11	40	32	110	49	11,0	5	0,66	25400

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	MS2263	1,5	DT9IP
20	MS2263	1,5	DT9IP
25	MS2263	1,5	DT9IP
32	MS2263	1,5	DT9IP
40	MS2263	1,5	DT9IP



- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



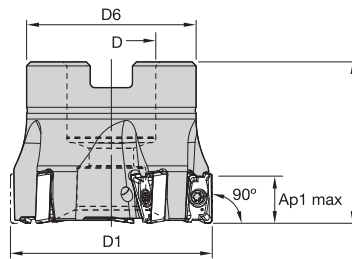
■ Cylindrical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
6131627	M4D016Z02A16LN11L090	16	16	90	25	11,0	2	0,12	48000
6136737	M4D016Z02A16LN11L150	16	16	150	25	11,0	2	0,21	48000
6131629	M4D020Z02A20LN11L150	20	20	150	28	11,0	2	0,33	40200
6131681	M4D020Z03A20LN11L090	20	20	90	28	11,0	3	0,21	40200
6136739	M4D020Z03A20LN11L150	20	20	150	28	11,0	3	0,33	40200
6131683	M4D025Z03A25LN11L170	25	25	170	43	11,0	3	0,63	34300
6131685	M4D025Z04A25LN11L100	25	25	100	43	11,0	4	0,33	34300
6136791	M4D025Z04A25LN11L170	25	25	170	43	11,0	4	0,59	34300
6134184	M4D032Z04A32LN11L200	32	32	200	49	11,0	4	1,16	29200
6134186	M4D032Z05A32LN11L110	32	32	110	49	11,0	5	0,61	29200
6136792	M4D032Z05A32LN11L200	32	32	200	49	11,0	5	1,17	29200

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	MS2263	1,5	DT9IP
20	MS2263	1,5	DT9IP
25	MS2263	1,5	DT9IP
32	MS2263	1,5	DT9IP

- One tool for all applications: from roughing to finishing.
- Superior wall and surface finishing capabilities.
- Best choice for stepping down operations.
- Up to 11mm depth of cut.



■ Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
6134188	M4D040Z04S16LN11	40	16	37	40	11,0	4	0,23	25400
6134189	M4D040Z06S16LN11	40	16	37	40	11,0	6	0,22	25400
6136796	M4D040Z07S16LN11	40	16	37	40	11,0	7	0,23	25400
6134190	M4D050Z05S22LN11	50	22	42	40	11,0	5	0,31	22300
6134231	M4D050Z07S22LN11	50	22	42	40	11,0	7	0,32	22300
6136797	M4D050Z09S22LN11	50	22	42	40	11,0	9	0,32	22300
6134232	M4D063Z06S22LN11	63	22	50	40	11,0	6	0,56	19500
6134233	M4D063Z09S22LN11	63	22	50	40	11,0	9	0,56	19500
6134234	M4D080Z08S27LN11	80	27	60	50	11,0	8	1,12	17100
6136798	M4D080Z10S27LN11	80	27	60	50	11,0	10	1,11	17100

■ Spare Parts

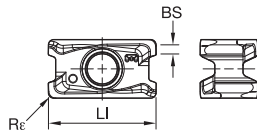


D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	MS2263	1,5	DT9IP	125.825
50	MS2263	1,5	DT9IP	125.025
63	MS2263	1,5	DT9IP	125.025
80	MS2263	1,5	DT9IP	125.230



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant

P1-P2			◇/◆	◆◆		◇◇						
P3-P4			◇/◆	◆◆		◇	◇◇					
P5-P6			◇/◆	◆◆		◇	◇◇					
M1-M2			◇/◆	◆			◆				◆◆	
M3			◇/◆	◆								◆◆
K1-K2		◆◆				◇◇						
K3		◆◆					◇◇					
N1	◆◆											
N2	◆◆											
S1						◆						◆◆
S2						◆						◆◆
S3						◆	◆					◆◆
S4						◆	◆					◆◆



ISO catalogue number	LI	BS	Re	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
LNGU110404ERGE	12,16	1,40	0,4	-	-	-	6131514	-	-	6131516	-
LNGU110408ERGE	12,16	1,00	0,8	-	-	6131542	6131541	-	-	6131543	6201354
LNGU110412ERGE	12,17	0,60	1,2	-	-	-	-	-	-	6201353	6201351
General Machining											
LNGU110404ERLEJ	12,16	1,40	0,4	6201292	-	-	-	-	-	-	-
LNGU110408ERLEJ	12,16	1,00	0,8	6131556	-	-	-	-	-	-	-
LNGU110404SRGE	12,16	1,40	0,4	-	-	-	-	-	-	6201280	6201291
LNGU110408SRGE	12,16	1,00	0,8	-	-	6132022	6132024	6132026	6132025	6132023	6165397
LNPU110408SRGE	12,10	0,90	0,8	-	6131506	6131502	6131504	6131507	6131505	6131503	-
LNPU110412SRGE	12,10	0,50	1,2	-	6131512	-	6131430	-	-	6131429	-
LNPU110416SRGE	12,10	0,02	1,6	-	-	-	6131559	-	6131560	6131558	-
Heavy Machining											
LNGU110408SRGEM	12,16	0,90	0,8	-	6131604	-	-	6131602	6131603	6131606	-
LNGU110412SRGEM	12,16	0,60	1,2	-	6131425	-	-	-	-	6131426	-
LNGU110416SRGEM	12,16	0,10	1,6	-	6201021	-	-	-	6200730	6201022	-

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.E..LEJ	0,13	0,35	0,58	0,09	0,25	0,42	0,07	0,19	0,31	0,06	0,17	0,27	0,06	0,15	0,25	.E..LEJ
.E..GE	0,23	0,43	0,59	0,17	0,31	0,43	0,13	0,23	0,32	0,11	0,20	0,28	0,10	0,18	0,25	.E..GE
.S..GE	0,23	0,46	0,65	0,17	0,33	0,47	0,13	0,25	0,35	0,11	0,22	0,31	0,10	0,20	0,28	.S..GE
.S..GEM	0,23	0,46	0,71	0,17	0,33	0,51	0,13	0,25	0,38	0,11	0,22	0,33	0,10	0,20	0,30	.S..GEM

LNG...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
 LNP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- .E..LEJ: For aluminium and other non-ferrous alloys.
- .E..GE: First choice for stainless steel and high-temp alloys. For highest finishing requirements in light machining.
- .S..GE: Universal geometry. First choice for steel.
- .S..GEM: First choice for cast iron machining and all heavy applications.

Material Group		KC422M*			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	330	285	270	260	230	215
	2	-	-	-	-	-	-	275	240	200	220	190	160
	3	-	-	-	-	-	-	255	215	175	200	170	140
	4	-	-	-	-	-	-	225	185	150	180	150	120
	5	-	-	-	-	-	-	185	170	150	150	135	120
	6	-	-	-	-	-	-	165	125	100	130	100	80
M	1	-	-	-	-	-	-	205	180	165	170	150	135
	2	-	-	-	-	-	-	185	160	130	155	130	110
	3	-	-	-	-	-	-	140	120	95	115	100	80
K	1	-	-	-	270	245	215	230	205	185	-	-	-
	2	-	-	-	210	190	175	180	160	150	-	-	-
	3	-	-	-	175	160	145	150	135	120	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	120	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	455	395	370	295	260	245	260	230	215
	2	-	-	-	280	255	230	250	215	180	220	190	160
	3	-	-	-	255	230	205	230	195	160	200	170	140
	4	-	-	-	190	175	160	205	170	135	180	150	120
	5	-	-	-	260	230	210	170	155	135	150	135	120
	6	-	-	-	160	135	125	150	115	90	130	100	80
M	1	-	-	-	205	185	155	195	170	155	170	150	135
	2	-	-	-	185	160	140	175	150	125	155	130	110
	3	-	-	-	145	130	115	130	115	90	115	100	80
K	1	420	385	340	295	265	240	-	-	-	-	-	-
	2	335	295	275	235	210	190	-	-	-	-	-	-
	3	280	250	230	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness increases, the speed should be decreased.

Dry

Wet



Material Group		KC422M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	265	230	215	210	185	170
	2	-	-	-	-	-	-	220	190	160	175	150	130
	3	-	-	-	-	-	-	205	170	140	160	135	110
	4	-	-	-	-	-	-	180	150	120	145	120	95
	5	-	-	-	-	-	-	150	135	120	120	110	95
	6	-	-	-	-	-	-	130	100	80	105	80	65
M	1	-	-	-	-	-	-	165	145	130	135	120	110
	2	-	-	-	-	-	-	150	130	105	125	105	90
	3	-	-	-	-	-	-	110	95	75	90	80	65
K	1	-	-	-	215	195	170	185	165	150	-	-	-
	2	-	-	-	170	150	140	145	130	120	-	-	-
	3	-	-	-	140	130	115	120	110	95	-	-	-
N	1	860	755	700	-	-	-	-	-	-	-	-	-
	2	755	700	610	-	-	-	-	-	-	-	-	-
	3	755	700	610	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	30	30	20	30	25	20
	2	-	-	-	-	-	-	30	30	20	30	25	20
	3	-	-	-	-	-	-	40	30	20	35	30	20
	4	-	-	-	-	-	-	55	40	30	45	35	25
H	1	-	-	-	-	-	-	95	70	55	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	365	315	295	285	250	235	-	-	-
	2	-	-	-	225	205	185	240	210	170	-	-	-
	3	-	-	-	205	185	165	220	190	150	-	-	-
	4	-	-	-	150	140	130	195	165	130	-	-	-
	5	-	-	-	210	185	170	165	150	130	135	115	95
	6	-	-	-	130	110	100	145	110	90	120	90	65
M	1	-	-	-	165	150	125	190	165	150	170	135	110
	2	-	-	-	150	130	110	170	145	120	145	115	95
	3	-	-	-	115	105	90	125	110	90	115	90	70
K	1	335	310	270	235	210	190	-	-	-	-	-	-
	2	270	235	220	190	170	150	-	-	-	-	-	-
	3	225	200	185	155	140	130	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	30	30	20
	2	-	-	-	-	-	-	40	30	30	30	30	20
	3	-	-	-	-	-	-	50	40	30	40	30	20
	4	-	-	-	55	40	25	65	50	30	50	40	25
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

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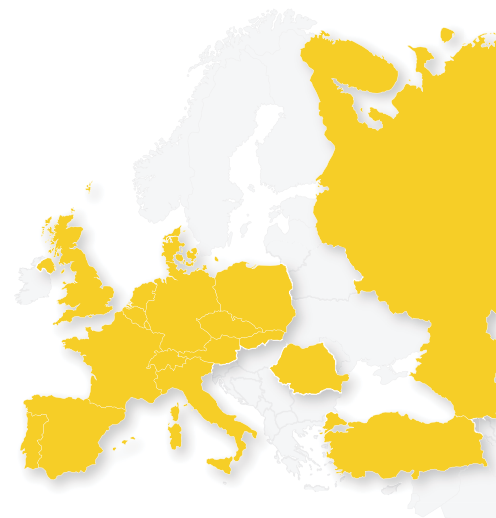


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➤ Mill 4-15™ • Double-Sided Shoulder Milling

Primary Application

The Mill 4-15 series is specially engineered to achieve excellent surface quality and higher material removal rates in shoulder milling applications. Its unique design enables multiple passes (stepping down) with outstanding results. The Mill 4™ platform is applicable in a wide range of workpiece materials: steel, cast iron, stainless steel, and titanium, from roughing to finishing operations.

Features and Benefits

- Double-sided strong insert with 4 cutting edges.
- High positive geometry for lower cutting forces.
- Superior wall and surface finish capabilities.
- “Stepless” solution. No mismatch when machining walls in different steps.

-EGEJ



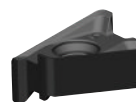
For non-ferrous materials.

-EGE



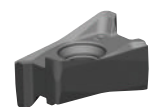
1st choice for stainless steel.
Lower cutting forces.

-SGE

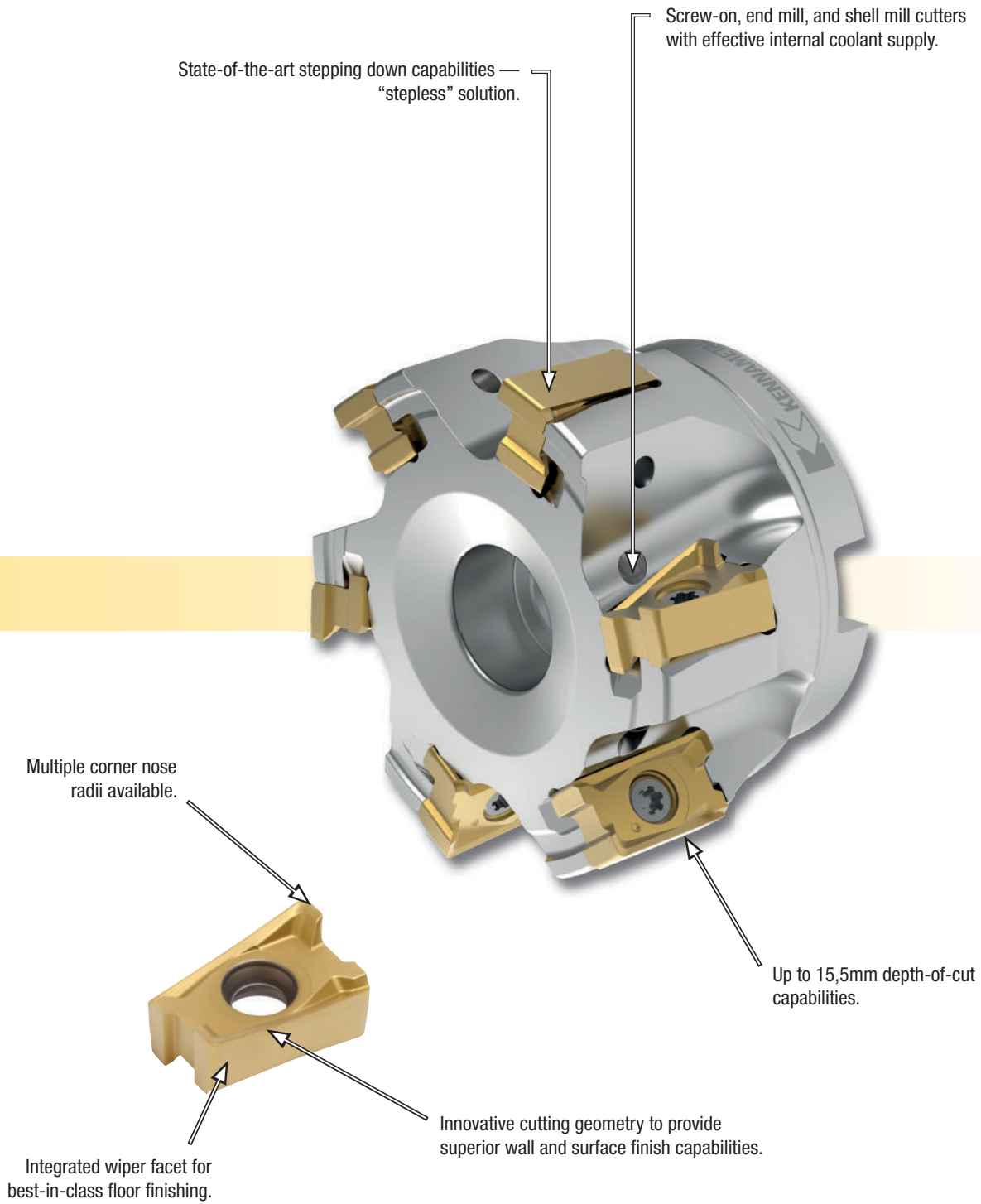


First choice for the Mill 4 platform,
especially when machining steels.

-SGEM



1st choice for cast iron.
Strongest cutting edge.



State-of-the-art stepping down capabilities —
“stepless” solution.

Screw-on, end mill, and shell mill cutters
with effective internal coolant supply.

Multiple corner nose
radii available.

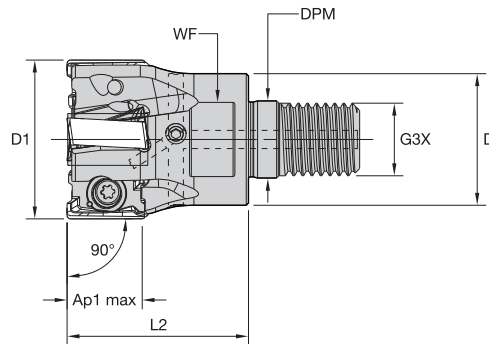
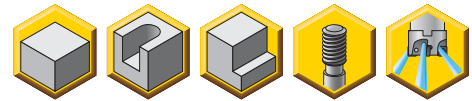
Up to 15,5mm depth-of-cut
capabilities.

Integrated wiper facet for
best-in-class floor finishing.

Innovative cutting geometry to provide
superior wall and surface finish capabilities.



- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



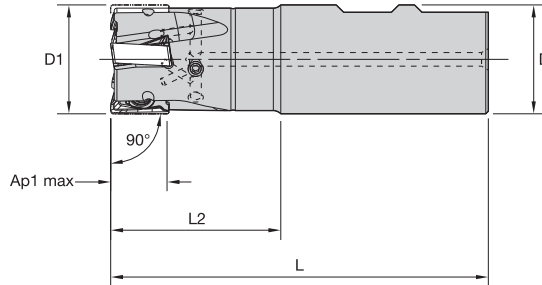
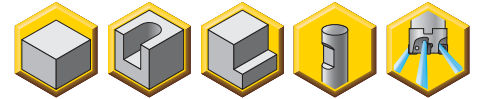
■ Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	kg	max RPM
5531911	M4D025Z02M12LN15	25	21	12,5	M12	32	17	15,5	2	0,08	26700
5531912	M4D032Z03M16LN15	32	29	17,0	M16	40	24	15,5	3	0,18	22000
5555606	M4D032Z04M16LN15	32	29	17,0	M16	40	24	15,5	4	0,18	22000
5528599	M4D035Z04M16LN15	35	29	17,0	M16	40	24	15,5	4	0,19	20600
5531913	M4D040Z05M16LN15	40	29	17,0	M16	40	24	15,5	5	0,23	18800

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS-2071	3,5	DT15IP
32	MS-2071	3,5	DT15IP
35	MS-2071	3,5	DT15IP
40	MS-2071	3,5	DT15IP

- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



Weldon End Mills

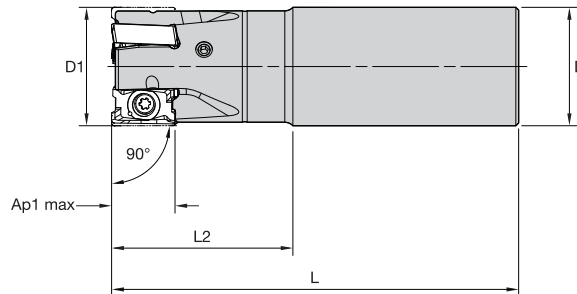
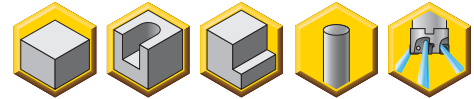
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
5528630	M4D025Z02B25LN15	25	25	89	32	15,5	2	0,28	26700
5528631	M4D032Z03B32LN15	32	32	111	50	15,5	3	0,58	22000
5531914	M4D040Z03B32LN15	40	32	111	50	15,5	3	0,65	18800
5555607	M4D040Z04B32LN15	40	32	111	50	15,5	4	0,65	18800

Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS-2071	3,5	DT15IP
32	MS-2071	3,5	DT15IP
40	MS-2071	3,5	DT15IP



- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



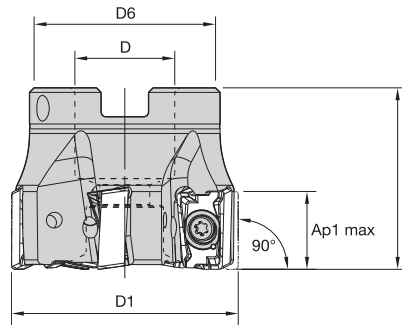
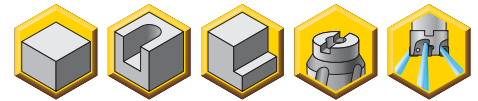
■ Cylindrical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	kg	max RPM
5531915	M4D025Z02A25LN15L100	25	25	100	43	15,5	2	0,28	26700
5531916	M4D025Z02A25LN15L170	25	25	170	43	15,5	2	0,58	26700
5531917	M4D032Z03A32LN15L110	32	32	110	49	15,5	3	0,58	22000
5531918	M4D032Z03A32LN15L200	32	32	200	50	15,5	3	1,14	22000
5555608	M4D032Z04A32LN15L110	32	32	110	49	15,5	4	0,58	22000
5555609	M4D032Z04A32LN15L200	32	32	200	50	15,5	4	1,14	22000
5555800	M4D040Z04A32LN15L200	40	32	200	50	15,5	4	1,20	18800

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS-2071	3,5	DT15IP
32	MS-2071	3,5	DT15IP
40	MS-2071	3,5	DT15IP

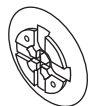
- Superior wall and surface finish capabilities.
- True 90° capabilities. Stepless solution when using multiple steps.
- Engineered to run up to 15,5mm depth of cut.
- Effective internal coolant feature, reaching the cutting edge precisely.



Shell Mills

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	kg	max RPM
5528632	M4D040Z04S16LN15	40	16	37	40	15,5	4	0,20	18800
5555801	M4D040Z05S16LN15	40	16	37	40	15,5	5	0,19	18800
5698436	M4D050Z04S22LN15	50	22	42	40	15,5	4	0,28	16300
5528633	M4D050Z05S22LN15	50	22	42	40	15,5	5	0,28	16300
5528634	M4D050Z06S22LN15	50	22	42	40	15,5	6	0,27	16300
5698437	M4D063Z05S22LN15	63	22	50	40	15,5	5	0,50	14200
5528635	M4D063Z06S22LN15	63	22	50	40	15,5	6	0,49	14200
5528636	M4D063Z07S22LN15	63	22	50	40	15,5	7	0,50	14200
5698438	M4D080Z05S27LN15	80	27	60	50	15,5	5	1,03	12300
5528637	M4D080Z07S27LN15	80	27	60	50	15,5	7	1,02	12300
5555802	M4D080Z09S27LN15	80	27	60	50	15,5	9	1,04	12300
5698439	M4D100Z06S32LN15	100	32	80	50	15,5	6	1,58	10900
5528638	M4D100Z08S32LN15	100	32	80	50	15,5	8	1,57	10900
5555803	M4D100Z11S32LN15	100	32	80	50	15,5	11	1,64	10900
5698490	M4D125Z07S40LN15	125	40	90	63	15,5	7	2,96	9600
5555804	M4D125Z09S40LN15	125	40	90	63	15,5	9	2,98	9600
5532000	M4D125Z12S40LN15	125	40	90	63	15,5	12	3,00	9600
5698491	M4D160Z08S40LN15	160	40	110	63	15,5	8	4,67	8400
5555805	M4D160Z12S40LN15	160	40	110	63	15,5	12	4,78	8400
5555806	M4D160Z16S40LN15	160	40	110	63	15,5	16	4,75	8400

Spare Parts

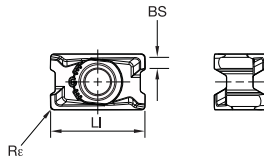


D1	insert screw	Nm	Torx Plus driver	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant cap
40	MS-2071	3,5	DT15IP	MS1294	—	—	—
50	MS-2071	3,5	DT15IP	125.025	—	—	—
63	MS-2071	3,5	DT15IP	125.025	—	—	—
80	MS-2071	3,5	DT15IP	MS2038	—	—	—
100	MS-2071	3,5	DT15IP	—	MS2189C	—	—
125	MS-2071	3,5	DT15IP	—	MS2187C	—	—
160	MS-2071	3,5	DT15IP	—	—	420.200	470.233

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2			◇/◆	◆◆		◇◇						
P3-P4			◇/◆	◆◆		◇	◇◇					
P5-P6			◇/◆	◆◆		◇	◇◇					
M1-M2			◇/◆	◆			◆				◆◆	
M3			◇/◆	◆								◆◆
K1-K2		◆◆					◇◇					
K3		◆◆					◇◇					
N1	◆◆											
N2	◆◆											
S1						◆						◆◆
S2						◆						◆◆
S3						◆	◆					◆◆
S4						◆	◆					◆◆

ISO catalogue number	LI	BS	Re	KC422M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
LNGU15T604ERGE	17,01	2,20	0,4	-	-	-	5588513	-	-	5588515	-
LNGU15T608ERGE	17,01	1,80	0,8	-	-	5588388	5588385	-	-	5588387	6165422
LNGU15T612ERGE	17,01	1,40	1,2	-	-	-	5588517	-	-	5588519	6165423
LNGU15T616ERGE	17,01	1,07	1,6	-	-	-	5627789	-	-	5627871	-

General Machining											
LNPU15T604SRGE	16,90	2,20	0,4	-	5608034	-	5608036	-	-	-	-
LNGU15T604ERGEJ	17,00	2,20	0,4	6001231	-	-	-	-	-	-	-
LNGU15T604SRGE	17,00	2,20	0,4	-	5516073	-	5516075	-	-	-	-
LNPU15T608SRGE	16,90	1,80	0,8	-	5547848	5547849	5548040	5548041	5548042	5684657	-
LNGU15T608ERGEJ	17,00	1,80	0,8	6001232	-	-	-	-	-	-	-
LNGU15T608SRGE	17,01	1,80	0,8	-	5515759	5515890	5515891	5515892	5515893	-	6165400
LNPU15T612SRGE	16,90	1,50	1,2	-	5607996	-	5607998	-	-	5976169	-
LNGU15T612SRGE	17,01	1,40	1,2	-	5515746	-	5515748	-	-	-	6165421
LNPU15T616SRGE	16,90	1,10	1,6	-	6019501	-	6019503	-	6019505	6019506	-
LNGU15T616SRGE	17,01	1,07	1,6	-	5627784	-	5627786	-	5627788	-	-
LNPU15T620SRGE	16,92	0,70	2,0	-	-	-	6001233	-	-	6001236	-

Heavy Machining											
LNGU15T608SRGEM	17,01	1,70	0,8	-	5575827	-	-	5575828	5575829	5976170	-
LNGU15T612SRGEM	17,01	1,30	1,2	-	5947280	-	-	-	-	5976671	-
LNGU15T616SRGEM	17,01	0,95	1,6	-	5630018	-	-	-	5630070	5976672	-
LNGU15T620SRGEM	17,01	0,34	2,0	-	-	-	-	-	-	6019510	-

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..GEJ	0,12	0,47	0,84	0,08	0,34	0,60	0,06	0,26	0,45	0,06	0,22	0,39	0,05	0,20	0,36	.E..GEJ
.E..GE	0,23	0,54	0,93	0,17	0,39	0,67	0,13	0,29	0,50	0,11	0,25	0,44	0,10	0,23	0,40	.E..GE
.S..GE	0,23	0,59	0,95	0,17	0,43	0,68	0,13	0,32	0,51	0,11	0,28	0,44	0,10	0,25	0,41	.S..GE
.S..GEM	0,23	0,59	0,95	0,17	0,43	0,68	0,13	0,32	0,51	0,11	0,28	0,44	0,10	0,25	0,41	.S..GEM

LNG...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.

LNP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

.E..LEJ: For aluminium and other non-ferrous alloys.

.E..GE: First choice for stainless steel and high-temp alloys. For highest finishing requirements in light machining.

.S..GE: Universal geometry. First choice for steel.

.S..GEM: First choice for cast iron machining and all heavy applications.

Material Group		KC422M*			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	330	285	270	260	230	215
	2	-	-	-	-	-	-	275	240	200	220	190	160
	3	-	-	-	-	-	-	255	215	175	200	170	140
	4	-	-	-	-	-	-	225	185	150	180	150	120
	5	-	-	-	-	-	-	185	170	150	150	135	120
	6	-	-	-	-	-	-	165	125	100	130	100	80
M	1	-	-	-	-	-	-	205	180	165	170	150	135
	2	-	-	-	-	-	-	185	160	130	155	130	110
	3	-	-	-	-	-	-	140	120	95	115	100	80
K	1	-	-	-	270	245	215	230	205	185	-	-	-
	2	-	-	-	210	190	175	180	160	150	-	-	-
	3	-	-	-	175	160	145	150	135	120	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	120	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	455	395	370	295	260	245	260	230	215
	2	-	-	-	280	255	230	250	215	180	220	190	160
	3	-	-	-	255	230	205	230	195	160	200	170	140
	4	-	-	-	190	175	160	205	170	135	180	150	120
	5	-	-	-	260	230	210	170	155	135	150	135	120
	6	-	-	-	160	135	125	150	115	90	130	100	80
M	1	-	-	-	205	185	155	195	170	155	170	150	135
	2	-	-	-	185	160	140	175	150	125	155	130	110
	3	-	-	-	145	130	115	130	115	90	115	100	80
K	1	420	385	340	295	265	240	-	-	-	-	-	-
	2	335	295	275	235	210	190	-	-	-	-	-	-
	3	280	250	230	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness increases, the speed should be decreased.

Dry

Wet



Material Group		KC422M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	265	230	215	210	185	170
	2	-	-	-	-	-	-	220	190	160	175	150	130
	3	-	-	-	-	-	-	205	170	140	160	135	110
	4	-	-	-	-	-	-	180	150	120	145	120	95
	5	-	-	-	-	-	-	150	135	120	120	110	95
	6	-	-	-	-	-	-	130	100	80	105	80	65
M	1	-	-	-	-	-	-	165	145	130	135	120	110
	2	-	-	-	-	-	-	150	130	105	125	105	90
	3	-	-	-	-	-	-	110	95	75	90	80	65
K	1	-	-	-	215	195	170	185	165	150	-	-	-
	2	-	-	-	170	150	140	145	130	120	-	-	-
	3	-	-	-	140	130	115	120	110	95	-	-	-
N	1	860	755	700	-	-	-	-	-	-	-	-	-
	2	755	700	610	-	-	-	-	-	-	-	-	-
	3	755	700	610	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	30	30	20	30	25	20
	2	-	-	-	-	-	-	30	30	20	30	25	20
	3	-	-	-	-	-	-	40	30	20	35	30	20
	4	-	-	-	-	-	-	55	40	30	45	35	25
H	1	-	-	-	-	-	-	95	70	55	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	365	315	295	285	250	235	-	-	-
	2	-	-	-	225	205	185	240	210	170	-	-	-
	3	-	-	-	205	185	165	220	190	150	-	-	-
	4	-	-	-	150	140	130	195	165	130	-	-	-
	5	-	-	-	210	185	170	165	150	130	135	115	95
	6	-	-	-	130	110	100	145	110	90	120	90	65
M	1	-	-	-	165	150	125	190	165	150	170	135	110
	2	-	-	-	150	130	110	170	145	120	145	115	95
	3	-	-	-	115	105	90	125	110	90	115	90	70
K	1	335	310	270	235	210	190	-	-	-	-	-	-
	2	270	235	220	190	170	150	-	-	-	-	-	-
	3	225	200	185	155	140	130	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	30	30	20
	2	-	-	-	-	-	-	40	30	30	30	30	20
	3	-	-	-	-	-	-	50	40	30	40	30	20
	4	-	-	-	55	40	25	65	50	30	50	40	25
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in bold type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

➤ Mill 1-10™

High-Performance Shoulder Milling Platform

Primary Application

The multifunctional Mill 1-10 platform works with all workpiece materials in shoulder, ramp, slot, plunge, and helical milling with one insert style to improve productivity and reduce inventory and machining costs. The super positive cutting rake, soft cutting action, and low cutting forces enable higher feed rates and spindle protection. Innovative insert and cutter body designs offer improved ramping capabilities.

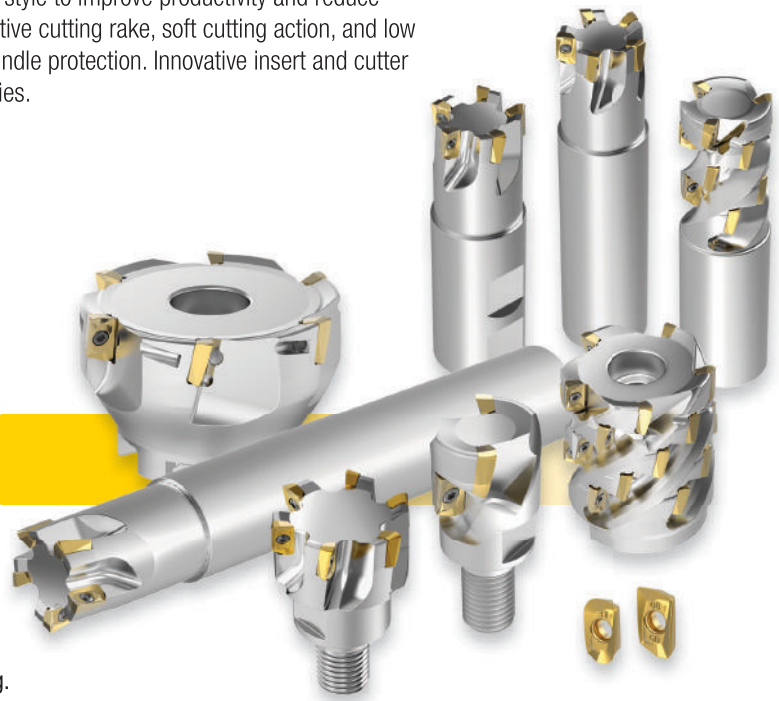
Features and Benefits

Versatility

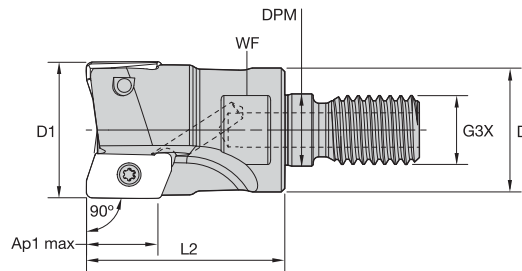
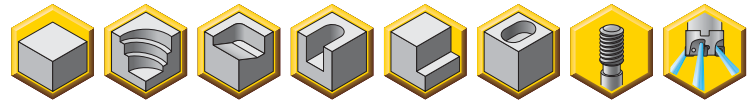
- Works with all workpiece materials.
- Capable of shoulder, ramp, plunge, and helical milling.
- Internal coolant and air supply.

Advantages

- Optimised soft cutting edge.
- Elliptical edge generates 90° wall.
- Increased ramping capability due to state of the art insert and cutter body design.
- Innovative chip gash design for excellent chip evacuation and perfect cutter body stability.
- All pockets are machined into heat-treated materials, guaranteeing best-in-class runout and pocket strength.
- Inserts feature innovative margin along the main cutting edge, corner nose radius, and wiper facet for perfect edge stability.



- Ramping capable for all Mill 1-10.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Screw-On End Mills

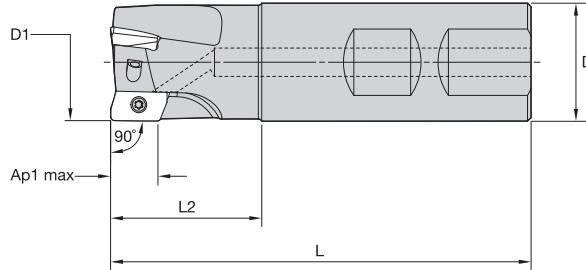
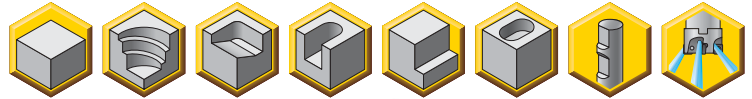
order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
3745708	16A02R025M08ED10	16	13	8,5	M8	25	10	10,1	2	9.5°	0,02	50100
3745709	20A02R028M10ED10	20	18	10,5	M10	28	15	10,1	2	6.0°	0,04	44800
3745710	20A03R028M10ED10	20	18	10,5	M10	28	15	10,1	3	6.0°	0,05	44800
3745711	25A03R032M12ED10	25	21	12,5	M12	32	17	10,0	3	4.0°	0,09	40000
3745712	25A04R032M12ED10	25	21	12,5	M12	32	17	10,0	4	4.0°	0,08	40000
3745723	32A04R040M16ED10	32	29	17,0	M16	40	24	10,0	4	2.8°	0,19	35400
3745724	32A05R040M16ED10	32	29	17,0	M16	40	24	10,0	5	2.8°	0,19	35400
3745725	40A06R040M16ED10	40	29	17,0	M16	40	24	9,9	6	2.0°	0,23	31600
3745726	42A06R040M16ED10	42	29	17,0	M16	40	24	9,9	6	1.8°	0,23	30900

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx wrench
16	MS2205	1,0	F71P
20	MS2205	1,0	F71P
25	MS2205	1,0	F71P
32	MS2205	1,0	F71P
40	MS2205	1,0	F71P
42	MS2205	1,0	F71P

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



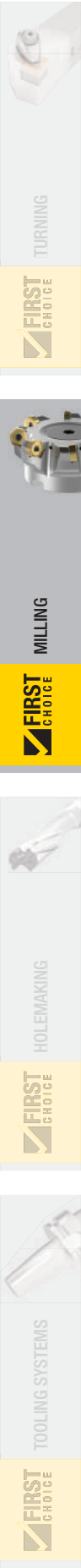
Weldon End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744633	16A02R025B16ED10	16	16	74	25	10,1	2	9.5°	0,09	50100
3744635	20A03R028B20ED10	20	20	79	28	10,1	3	6.0°	0,15	44800
3744636	25A03R032B25ED10	25	25	89	32	10,0	3	4.0°	0,28	40000
3744637	25A04R032B25ED10	25	25	89	32	10,0	4	4.0°	0,28	40000
3744638	32A04R040B32ED10	32	32	101	40	10,0	4	2.8°	0,53	35400
3744639	32A05R040B32ED10	32	32	101	40	10,0	5	2.8°	0,53	35400

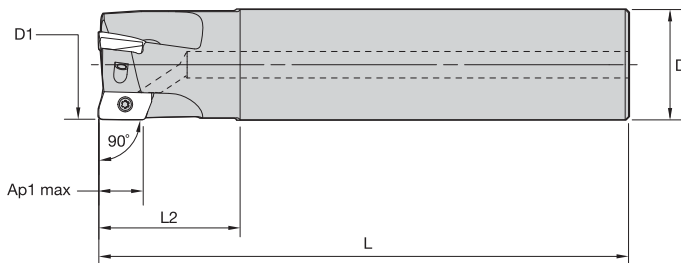
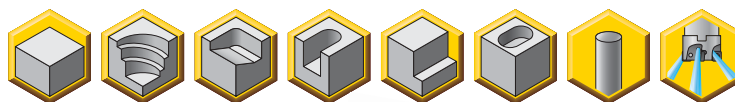
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	MS2205	1,0	DT7IP
20	MS2205	1,0	DT7IP
25	MS2205	1,0	DT7IP
32	MS2205	1,0	DT7IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Cylindrical End Mills

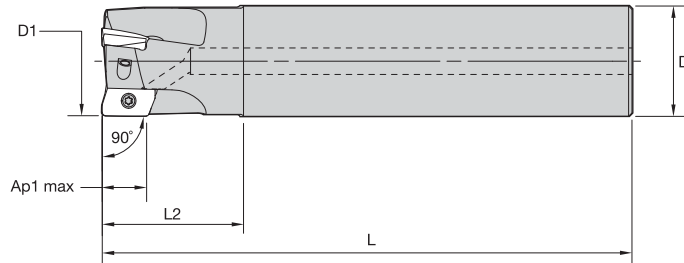
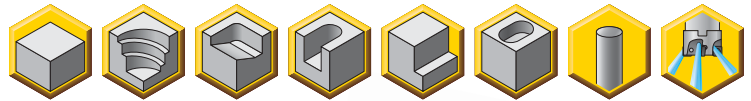
order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744538	12A01R020A16ED10	12	16	90	20	10,3	1	11.5°	0,12	57800
3744539	16A02R025A16ED10	16	16	100	25	10,1	2	9.5°	0,13	50100
3744540	20A02R028A20ED10	20	20	110	28	10,1	2	6.0°	0,23	44800
3744541	20A03R028A20ED10	20	20	110	28	10,1	3	6.0°	0,22	44800
3744542	25A03R032A25ED10	25	25	120	32	10,0	3	4.0°	0,40	40000
3744613	25A04R032A25ED10	25	25	120	32	10,0	4	4.0°	0,40	40000
3744614	32A04R040A32ED10	32	32	130	40	10,0	4	2.8°	0,72	35400
3744615	32A05R040A32ED10	32	32	130	40	10,0	5	2.8°	0,71	35400

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
12	MS2205	1,0	DT7IP
16	MS2205	1,0	DT7IP
20	MS2205	1,0	DT7IP
25	MS2205	1,0	DT7IP
32	MS2205	1,0	DT7IP

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Cylindrical End Mills • Long Length

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3744616	16A02R025A16ED10-170	16	16	170	25	10,1	2	9.5°	0,23	50100
3744617	16A02R025A16ED10R31-170	16	16	170	25	9,7	2	8.0°	0,23	50100
3744618	18A02R028A16ED10-170	18	16	170	28	10,1	2	7.5°	0,24	47200
3744619	20A02R032A20ED10-170	20	20	170	32	10,1	2	6.0°	0,37	44800
3744621	20A03R032A20ED10-170	20	20	170	32	10,1	3	6.0°	0,36	44800
3744622	20A03R032A20ED10R31-170	20	20	170	32	9,8	3	4.5°	0,36	44800
3744623	22A03R032A20ED10-170	22	20	170	32	10,1	3	5.0°	0,37	42700
3744624	25A03R040A25ED10-200	25	25	200	40	10,0	3	4.0°	0,69	40000
3744625	25A03R040A25ED10R31-200	25	25	200	40	9,8	3	3.0°	0,69	40000
3744626	25A04R040A25ED10-200	25	25	200	40	10,0	4	4.0°	0,68	40000
3744627	25A04R040A25ED10R31-200	25	25	200	40	9,8	4	3.0°	0,68	40000
3744628	28A04R040A25ED10-200	28	25	200	40	10,0	4	3.3°	0,71	37800
3744629	32A04R048A32ED10-200	32	32	200	48	10,0	4	2.8°	1,14	35400
3744631	32A05R048A32ED10-200	32	32	200	48	10,0	5	2.8°	1,13	35400

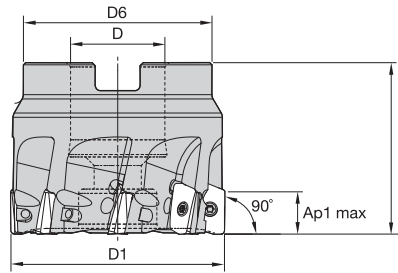
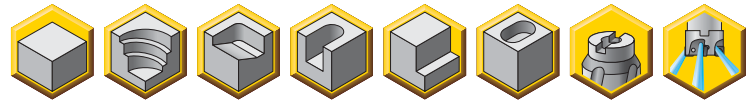
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.
"R31" in catalogue number designates factory-relieved tool which accepts inserts with nose radii > 2mm.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
16	MS2205	1,0	DT7IP
18	MS2205	1,0	DT7IP
20	MS2205	1,0	DT7IP
22	MS2205	1,0	DT7IP
25	MS2205	1,0	DT7IP
28	MS2205	1,0	DT7IP
32	MS2205	1,0	DT7IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Shell Mills

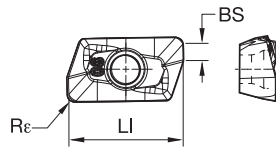
order number	catalogue number	D1	D	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
3745674	40A04RS90ED10D	40	16	37	40	9,9	4	2.0°	0,25	31600
3745675	40A06RS90ED10D	40	16	37	40	9,9	6	2.0°	0,24	31600
3745676	50A05RS90ED10D	50	22	44	40	9,9	5	1.5°	0,38	28300
3745677	50A08RS90ED10D	50	22	44	40	9,9	8	1.5°	0,36	28300
3745678	63A06RS90ED10D	63	22	44	40	9,9	6	1.0°	0,54	25200
3745679	63A09RS90ED10D	63	22	44	40	9,9	9	1.0°	0,53	25200
3745680	80A08RS90ED10D	80	27	60	50	9,9	8	.8°	1,26	22400
3745682	100B08RS90ED10D	100	32	80	50	9,9	8	.5°	1,88	20000

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	MS2205	1,0	DT7IP	—
50	MS2205	1,0	DT7IP	—
63	MS2205	1,0	DT7IP	MS1234
80	MS2205	1,0	DT7IP	MS2038
100	MS2205	1,0	DT7IP	—

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2				◇/◆	◆◆	◇◇						
P3-P4				◇/◆	◆◆	◇	◇◇					
P5-P6				◇/◆	◆◆	◇	◇◇					
M1-M2				◇/◆	◆			◆			◆◆	
M3				◇/◆	◆						◆◆	
K1-K2			◆◆/◇◇					◇				
K3			◆◆					◇◇				
N1	◆◆	◆										
N2	◆◆	◆										
S1								◆				◆◆
S2								◆				◆◆
S3							◆	◆				◆◆
S4							◆	◆				◆◆



ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40	
Light Machining												
EDCT10T302PDERLD	12,04	2,29	0,2	-	-	-	-	3959611	-	-	-	
EDCT10T302PDFRLDJ	12,05	2,29	0,2	3684779	-	-	-	-	-	-	-	
EDCT10T304PDERLD	12,05	1,98	0,4	-	-	3682452	3682513	3682514	-	-	-	
EDCT10T304PDFRLDJ	12,05	1,98	0,4	3682450	-	-	-	-	-	-	-	
EDCT10T308PDERLD	12,05	1,70	0,8	-	-	3649189	3649190	3649191	3649192	5545217	6176096	
EDCT10T308PDFRLDJ	12,05	1,70	0,8	3649187	-	-	-	-	-	-	-	
EDCT10T312PDERLD	12,06	1,30	1,2	-	-	-	-	3682655	-	-	6176097	
EDCT10T316PDERLD	12,06	0,90	1,6	-	-	-	-	3682781	3682782	-	6176098	
EDCT10T320PDERLD	12,06	0,49	2,0	-	-	-	-	3766023	-	-	-	
EDCT10T324PDERLD	12,06	0,11	2,4	-	-	-	-	-	-	-	6176099	
EDCT10T331PDERLD	11,52	-	3,1	-	-	-	-	3684828	-	-	6176100	



General Machining												
EDCT10T304PDERLDJ	12,05	1,98	0,4	-	3682451	-	-	-	-	-	-	
EDCT10T308PDERLDJ	12,05	1,70	0,8	-	3649188	-	-	-	-	-	-	
EDCT10T316PDERLDJ	12,06	0,90	1,6	-	3682778	-	-	-	-	-	-	
EDCT10T320PDERLDJ	12,06	0,49	2,0	-	3765831	-	-	-	-	-	-	
EDCT10T324PDERLDJ	12,06	0,11	2,4	-	3766027	-	-	-	-	-	-	
EDPT10T304PDERHD	12,05	2,07	0,4	-	-	3753592	-	3641741	-	5545215	-	
EDPT10T308PDERHD	12,05	1,70	0,8	-	-	3753593	3641712	3641734	3641736	-	6175756	
EDPT10T308PDERHD	12,05	1,69	0,8	-	-	-	-	-	-	5545214	-	
EDPT10T310PDERHD	12,05	1,49	1,0	-	-	-	-	3747114	-	-	-	
EDPT10T312PDERHD	12,06	1,30	1,2	-	-	3753594	-	3642029	-	6127887	6175757	
EDPT10T316PDERHD	12,06	0,90	1,6	-	-	-	-	3642094	3642096	6127888	6175758	
EDPT10T320PDERHD	12,06	0,49	2,0	-	-	-	-	3642097	-	6127889	6175759	
EDPT10T324PDERHD	12,06	0,11	2,4	-	-	-	-	3642102	-	-	6175760	
EDPT10T331PDERHD	11,52	-	3,1	-	-	-	-	3642137	-	-	6176091	



Heavy Machining												
EDPT10T304PDSRGD	12,05	2,07	0,4	-	-	-	-	3642141	-	-	-	
EDPT10T308PDSRGD	12,05	1,70	0,8	-	-	3753386	-	3642170	3642172	5545216	-	
EDPT10T308PDSRGE	12,05	1,70	0,8	-	-	-	3775016	-	-	-	-	
EDPT10T312PDSRGD	12,06	1,30	1,2	-	-	3753387	-	3642193	-	-	-	
EDPT10T316PDSRGD	12,06	0,90	1,6	-	-	-	-	3642196	3642198	-	-	



■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,31	0,06	0,16	0,27	0,05	0,15	0,25	.F..LDJ
.F..PCD	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,31	0,06	0,16	0,27	0,05	0,15	0,25	.F..PCD
.E..LDJ	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,32	0,06	0,16	0,28	0,05	0,15	0,25	.E..LDJ
.E..LD	0,12	0,35	0,57	0,09	0,25	0,41	0,07	0,19	0,31	0,06	0,17	0,27	0,05	0,15	0,25	.E..LD
.S..GE	0,23	0,46	0,70	0,17	0,33	0,51	0,13	0,25	0,38	0,11	0,22	0,33	0,10	0,20	0,30	.S..GE
.S..GD	0,23	0,47	0,71	0,17	0,34	0,51	0,13	0,25	0,38	0,11	0,22	0,33	0,10	0,20	0,30	.S..GD
.E..HD	0,23	0,51	0,82	0,17	0,37	0,59	0,13	0,28	0,44	0,11	0,24	0,38	0,10	0,22	0,35	.E..HD

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
 EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- .F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
- .E.LDJ: For aluminium and other non-ferrous alloys.
- .E.LD: Finishing and high-precision applications.
- .E.HD: Medium roughing and semi-finishing.
- .S.GE: Medium roughing and semi-finishing. Also suitable for austenitic stainless steel and super alloys.
- .S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
		P	1	-	-	-	330	285	270	260	230	215	455	395	370	295	260	245	260
	2	-	-	-	275	240	200	220	190	160	280	255	230	250	215	180	220	190	160
	3	-	-	-	255	215	175	200	170	140	255	230	205	230	195	160	200	170	140
	4	-	-	-	225	185	150	180	150	120	190	175	160	205	170	135	180	150	120
	5	-	-	-	185	170	150	150	135	120	260	230	210	170	155	135	150	135	120
	6	-	-	-	165	125	100	130	100	80	160	135	125	150	115	90	130	100	80
M	1	-	-	-	205	180	165	170	150	135	205	185	155	195	170	155	170	150	135
	2	-	-	-	185	160	130	155	130	110	185	160	140	175	150	125	155	130	110
	3	-	-	-	140	120	95	115	100	80	145	130	115	130	115	90	115	100	80
K	1	270	245	215	230	205	185	-	-	-	295	265	240	-	-	-	-	-	-
	2	210	190	175	180	160	150	-	-	-	235	210	190	-	-	-	-	-	-
	3	175	160	145	150	135	120	-	-	-	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	120	90	70	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
 As the average chip thickness increases, the speed should be decreased.

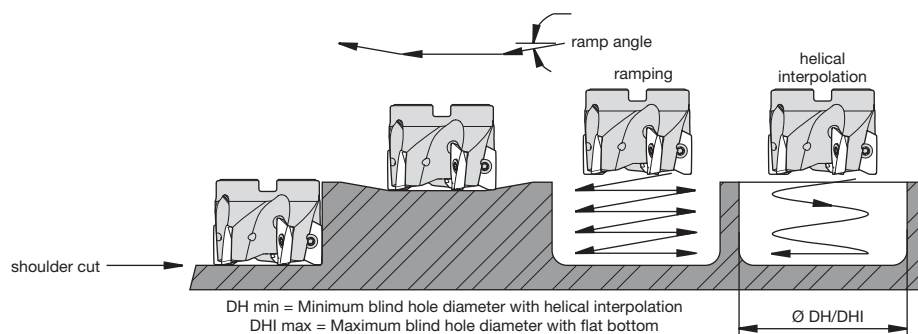
- Dry
- Wet

Material Group		KC410M/KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
P	1	- - -	- - -	265 230 215	210 185 170	365 315 295	285 250 235	- - -
	2	- - -	- - -	220 190 160	175 150 130	225 205 185	240 210 170	- - -
	3	- - -	- - -	205 170 140	160 135 110	205 185 165	220 190 150	- - -
	4	- - -	- - -	180 150 120	145 120 95	150 140 130	195 165 130	- - -
	5	- - -	- - -	150 135 120	120 110 95	210 185 170	165 150 130	135 115 95
	6	- - -	- - -	130 100 80	105 80 65	130 110 110	145 110 90	120 90 65
M	1	- - -	- - -	165 145 130	135 120 110	165 150 125	190 165 150	170 135 110
	2	- - -	- - -	150 130 105	125 105 90	150 130 110	170 145 120	145 115 95
	3	- - -	- - -	110 95 75	90 80 65	115 105 90	125 110 90	115 90 70
K	1	- - -	215 195 170	185 165 150	- - -	235 210 190	- - -	- - -
	2	- - -	170 150 140	145 130 120	- - -	190 170 150	- - -	- - -
	3	- - -	140 130 115	120 110 95	- - -	155 140 130	- - -	- - -
N	1	1170 1035 840	- - -	- - -	- - -	- - -	- - -	- - -
	2	1035 955 730	- - -	- - -	- - -	- - -	- - -	- - -
	3	1035 955 730	- - -	- - -	- - -	- - -	- - -	- - -
S	1	- - -	- - -	30 30 20	30 25 20	- - -	40 30 30	30 30 20
	2	- - -	- - -	30 30 20	30 25 20	- - -	40 30 30	30 30 20
	3	- - -	- - -	40 30 20	35 30 20	- - -	50 40 30	40 30 20
	4	- - -	- - -	55 40 30	45 35 25	55 40 25	65 50 30	50 40 25
H	1	- - -	- - -	95 70 55	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -	- - -

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet



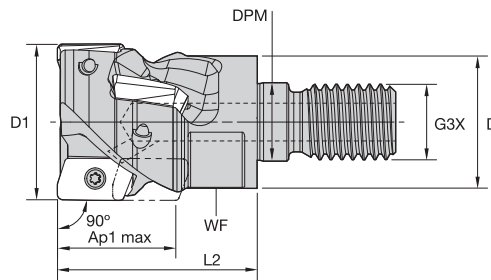
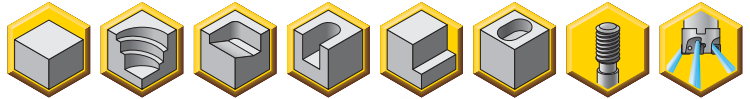


■ Application Examples

insert style	cutting diameter	max ramp angle to non-cutting corner tangent	max ramp angle to steel body interference	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter (no flat bottom)
Mill-1, 10mm	12	not recommended	not recommended	not recommended	not recommended	not recommended
Mill-1, 10mm	16	9,7°	12,3°	19,50	28,73	32
Mill-1, 10mm	18	7,6°	9,6°	23,29	32,68	63
Mill-1, 10mm	20	6,2°	8,6°	27,25	36,63	40
Mill-1, 10mm	22	5,2°	7,0°	31,25	40,63	44
Mill-1, 10mm	25	4,2°	5,3°	37,26	46,62	50
Mill-1, 10mm	28	3,5°	4,3°	43,26	52,62	56
Mill-1, 10mm	32	2,8°	3,3°	51,27	60,62	64
Mill-1, 10mm	40	2,0°	2,3°	67,30	76,61	80
Mill-1, 10mm	50	1,5°	1,6°	87,53	96,86	100
Mill-1, 10mm	63	1,2°	1,2°	113,54	122,86	126
Mill-1, 10mm	80	0,9°	0,9°	147,54	156,85	160
Mill-1, 10mm	100	0,7°	0,7°	187,54	196,85	200

NOTE: Max ramp angle decreases as nose radius increases.

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.



■ Screw-On Helical End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773811	M1H25J02R32M12ED10C4	25	21	12,5	M12	32	17	18,8	4	2	4.0°	0,07	33200

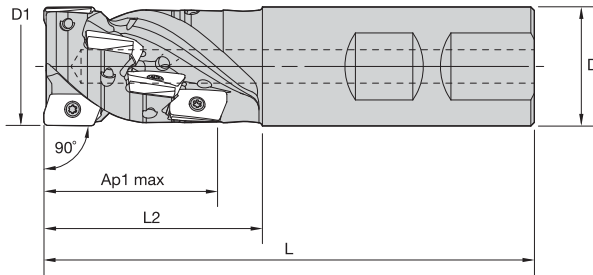
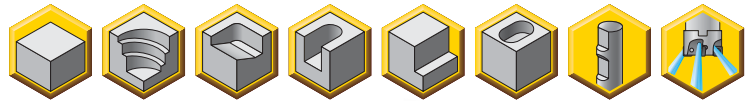
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx wrench
25	MS2205	1,0	F7IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.



■ Weldon Helical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773119	M1H25J02R46B25ED10C8	25	25	103	46	36,4	8	2	4.0°	0,31	33200
3773121	M1H32J03R54B32ED10C15	32	32	115	54	44,8	15	3	2.8°	0,53	29300

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
25	MS2205	1,0	DT7IP
32	MS2205	1,0	DT7IP

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

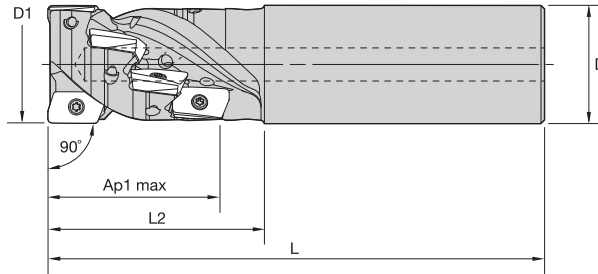
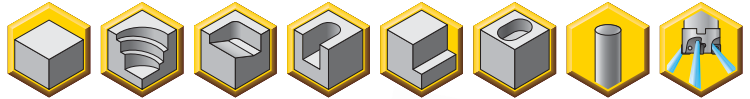
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.



■ Cylindrical Helical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773805	M1H32J03R54A32ED10C15	32	32	115	54	44,8	15	3	2.8°	0,53	29300

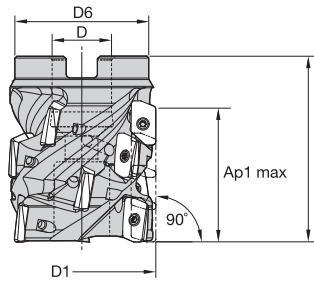
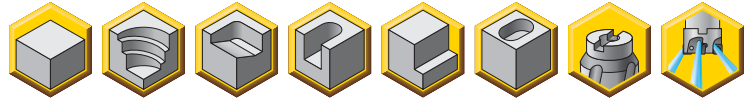
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

			
D1	insert screw	Nm	Torx Plus driver
32	MS2205	1,0	DT7IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.



■ Helical Shell Mills

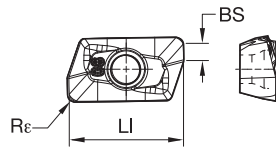
order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3773814	M1H40T03R50A16ED10C12	40	16	37	50	35,9	12	3	2.0°	0,27	26200
3773815	M1H40T05R50A16ED10C20	40	16	37	50	35,9	20	5	2.0°	0,26	26200
3773817	M1H50T05R60A22ED10C25	50	22	44	60	44,3	25	5	1.5°	0,55	23400

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	socket-head cap screw
40	MS2205	1,0	DT7IP	MS1340
50	MS2205	1,0	DT7IP	MS1558

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2				◇/◆	◆◆	◇◇						
P3-P4				◇/◆	◆◆	◇	◇◇					
P5-P6				◇/◆	◆◆	◇	◇◇					
M1-M2				◇/◆	◆					◆		◆◆
M3				◇/◆	◆							◆◆
K1-K2				◆◆/◇◇					◇			
K3				◆◆					◇◇			
N1	◆◆	◆										
N2	◆◆	◆										
S1								◆				◆◆
S2								◆				◆◆
S3								◆	◆			◆◆
S4								◆	◆			◆◆



ISO catalogue number	LI	BS	Rε	KC410M	KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40	
Light Machining												
EDCT10T302PDERLD	12,04	2,29	0,2	-	-	-	-	3959611	-	-	-	
EDCT10T302PDFRLDJ	12,05	2,29	0,2	3684779	-	-	-	-	-	-	-	
EDCT10T304PDERLD	12,05	1,98	0,4	-	-	3682452	3682513	3682514	-	-	-	
EDCT10T304PDFRLDJ	12,05	1,98	0,4	3682450	-	-	-	-	-	-	-	
EDCT10T308PDERLD	12,05	1,70	0,8	-	-	3649189	3649190	3649191	3649192	-	6176096	
EDCT10T308PDFRLDJ	12,05	1,70	0,8	3649187	-	-	-	-	-	-	-	
EDCT10T312PDERLD	12,06	1,30	1,2	-	-	-	-	3682655	-	-	6176097	
EDCT10T316PDERLD	12,06	0,90	1,6	-	-	-	-	3682781	3682782	-	6176098	
EDCT10T320PDERLD	12,06	0,49	2,0	-	-	-	-	3766023	-	-	-	
EDCT10T324PDERLD	12,06	0,11	2,4	-	-	-	-	-	-	-	6176099	
EDCT10T331PDERLD	11,52	-	3,1	-	-	-	-	-	-	-	6176100	



General Machining												
EDCT10T304PDERLDJ	12,05	1,98	0,4	-	3682451	-	-	-	-	-	-	
EDCT10T308PDERLDJ	12,05	1,70	0,8	-	3649188	-	-	-	-	-	-	
EDCT10T316PDERLDJ	12,06	0,90	1,6	-	3682778	-	-	-	-	-	-	
EDCT10T320PDERLDJ	12,06	0,49	2,0	-	3765831	-	-	-	-	-	-	
EDCT10T324PDERLDJ	12,06	0,11	2,4	-	3766027	-	-	-	-	-	-	
EDPT10T304PDERHD	12,05	2,07	0,4	-	-	3753592	-	3641741	-	5545215	-	
EDPT10T308PDERHD	12,05	1,70	0,8	-	-	3753593	3641712	3641734	3641736	-	6175756	
EDPT10T308PDERHD	12,05	1,69	0,8	-	-	-	-	-	-	5545214	-	
EDPT10T310PDERHD	12,05	1,49	1,0	-	-	-	-	3747114	-	-	-	
EDPT10T312PDERHD	12,06	1,30	1,2	-	-	3753594	-	3642029	-	6127887	6175757	
EDPT10T316PDERHD	12,06	0,90	1,6	-	-	-	-	3642094	3642096	6127888	6175758	
EDPT10T320PDERHD	12,06	0,49	2,0	-	-	-	-	3642097	-	6127889	6175759	
EDPT10T324PDERHD	12,06	0,11	2,4	-	-	-	-	3642102	-	-	6175760	
EDPT10T331PDERHD	11,52	-	3,1	-	-	-	-	3642137	-	-	6176091	



Heavy Machining												
EDPT10T304PDSRGD	12,05	2,07	0,4	-	-	-	-	3642141	-	-	-	
EDPT10T308PDSRGD	12,05	1,70	0,8	-	-	3753386	-	3642170	3642172	5545216	-	
EDPT10T308PDSRGE	12,05	1,70	0,8	-	-	-	3775016	-	-	-	-	
EDPT10T312PDSRGD	12,06	1,30	1,2	-	-	3753387	-	3642193	-	-	-	
EDPT10T316PDSRGD	12,06	0,90	1,6	-	-	-	-	3642196	3642198	-	-	



■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,31	0,06	0,16	0,27	0,05	0,15	0,25	.F..LDJ
.F...PCD	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,31	0,06	0,16	0,27	0,05	0,15	0,25	.F...PCD
.E..LDJ	0,12	0,35	0,58	0,08	0,25	0,42	0,06	0,19	0,32	0,06	0,16	0,28	0,05	0,15	0,25	.E..LDJ
.E..LD	0,12	0,35	0,57	0,09	0,25	0,41	0,07	0,19	0,31	0,06	0,17	0,27	0,05	0,15	0,25	.E..LD
.S..GE	0,23	0,46	0,70	0,17	0,33	0,51	0,13	0,25	0,38	0,11	0,22	0,33	0,10	0,20	0,30	.S..GE
.S..GD	0,23	0,47	0,71	0,17	0,34	0,51	0,13	0,25	0,38	0,11	0,22	0,33	0,10	0,20	0,30	.S..GD
.E..HD	0,23	0,51	0,82	0,17	0,37	0,59	0,13	0,28	0,44	0,11	0,24	0,38	0,10	0,22	0,35	.E..HD

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
 EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- .F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
- .E.LDJ: For aluminium and other non-ferrous alloys.
- .E.LD: Finishing and high-precision applications.
- .E.HD: Medium roughing and semi-finishing.
- .S.GE: Medium roughing and semi-finishing. Also suitable for austenitic stainless steel and super alloys.
- .S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC522M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	330	285	270	260	230	215	455	395	370	295	260	245	260	230	215
	2	-	-	-	275	240	200	220	190	160	280	255	230	250	215	180	220	190	160
	3	-	-	-	255	215	175	200	170	140	255	230	205	230	195	160	200	170	140
	4	-	-	-	225	185	150	180	150	120	190	175	160	205	170	135	180	150	120
	5	-	-	-	185	170	150	150	135	120	260	230	210	170	155	135	150	135	120
	6	-	-	-	165	125	100	130	100	80	160	135	125	150	115	90	130	100	80
M	1	-	-	-	205	180	165	170	150	135	205	185	155	195	170	155	170	150	135
	2	-	-	-	185	160	130	155	130	110	185	160	140	175	150	125	155	130	110
	3	-	-	-	140	120	95	115	100	80	145	130	115	130	115	90	115	100	80
K	1	270	245	215	230	205	185	-	-	-	295	265	240	-	-	-	-	-	-
	2	210	190	175	180	160	150	-	-	-	235	210	190	-	-	-	-	-	-
	3	175	160	145	150	135	120	-	-	-	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	120	90	70	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
 As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet

Material Group		KC410M/KC422M	KC520M	KC522M	KC725M	KCPK30	KCPM40	KCSM40
P	1	- - -	- - -	265 230 215	210 185 170	365 315 295	285 250 235	- - -
	2	- - -	- - -	220 190 160	175 150 130	225 205 185	240 210 170	- - -
	3	- - -	- - -	205 170 140	160 135 110	205 185 165	220 190 150	- - -
	4	- - -	- - -	180 150 120	145 120 95	150 140 130	195 165 130	- - -
	5	- - -	- - -	150 135 120	120 110 95	210 185 170	165 150 130	135 115 95
	6	- - -	- - -	130 100 80	105 80 65	130 110 100	145 110 90	120 90 65
M	1	- - -	- - -	165 145 130	135 120 110	165 150 125	190 165 150	170 135 110
	2	- - -	- - -	150 130 105	125 105 90	150 130 110	170 145 120	145 115 95
	3	- - -	- - -	110 95 75	90 80 65	115 105 90	125 110 90	115 90 70
K	1	- - -	215 195 170	185 165 150	- - -	235 210 190	- - -	- - -
	2	- - -	170 150 140	145 130 120	- - -	190 170 150	- - -	- - -
	3	- - -	140 130 115	120 110 95	- - -	155 140 130	- - -	- - -
N	1	1170 1035 840	- - -	- - -	- - -	- - -	- - -	- - -
	2	1035 955 730	- - -	- - -	- - -	- - -	- - -	- - -
	3	1035 955 730	- - -	- - -	- - -	- - -	- - -	- - -
S	1	- - -	- - -	30 30 20	30 25 20	- - -	40 30 30	30 30 20
	2	- - -	- - -	30 30 20	30 25 20	- - -	40 30 30	30 30 20
	3	- - -	- - -	40 30 20	35 30 20	- - -	50 40 30	40 30 20
	4	- - -	- - -	55 40 30	45 35 25	55 40 25	65 50 30	50 40 25
H	1	- - -	- - -	95 70 55	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -	- - -

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



➤ Mill 1-14™

Primary Application

The Mill 1-14 series is a versatile, functional cutter system for a range of cutting tasks. Mill 1-14 cutters can be used for profiling, slotting, ramping, helical interpolation, circular interpolation, and other milling applications. It's a single tool with multi-functional benefits. Mill 1-14 inserts are specially designed to add cutting versatility. Innovative micro-geometry features contribute greatly to enhanced performance, various rake angles, negative T-land, and small hone. Results include significantly reduced cycle times and lower cutting forces. Test results in producing 90° walls have proven excellent with the GD2 geometry.

Features and Benefits

Features

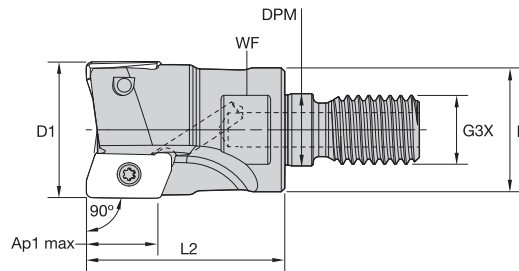
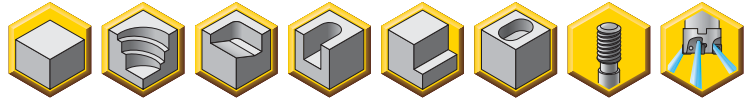
- Insert geometries and grades for most workpiece materials.
- Insert radii from 0,4mm up to 4mm.
- Axial depth of cut up to 14mm.
- Beyond™ grade technology.

Benefits

- Easy cutting action, even on entry and exiting the workpiece.
- Polished geometry for aluminium machining.
- Slotting, profiling, ramping, helical interpolation, and plunging.



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



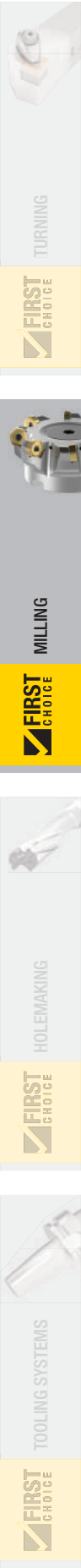
■ Screw-On End Mills

order number	catalogue number	D1	D	DPM	G3X	L2	WF	Ap1 max	Z	max ramp angle	kg	max RPM
2968370	20A02R035M10SED14	20	18	10,5	M10	35	15	14,6	2	16.6°	0,05	47500
2968371	25A02R035M12SED14	25	21	12,5	M12	35	17	14,5	2	10.5°	0,08	39700
3345679	25A03R035M12SED14	25	21	12,5	M12	35	17	14,5	3	10.5°	0,08	39700
2968372	32A03R040M16SED14	32	29	17,0	M16	40	22	14,4	3	6.8°	0,17	33300
3345680	32A04R040M16SED14	32	29	17,0	M16	40	22	14,4	4	6.8°	0,18	33300
2968373	40A04R040M16SED14	40	29	17,0	M16	40	22	14,3	4	4.8°	0,23	28700

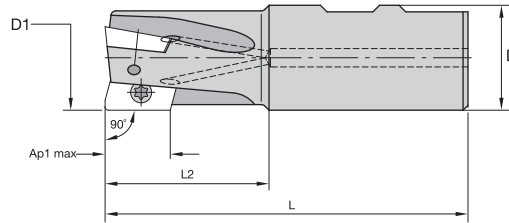
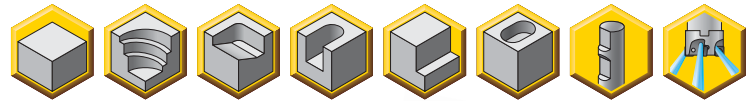
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver
20	MS2167	2,3	DT9IP
25	MS2166	2,3	DT9IP
32	MS2166	2,3	DT9IP
40	MS2166	2,3	DT9IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Weldon End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
2622232	20A02R039B20SED14	20	20	90	39	14,7	2	16.6°	0,17	47500
2623937	25A02R044B25SED14	25	25	101	44	14,6	2	10.7°	0,31	39700
2478640	25A03R044B25SED14	25	25	101	44	14,6	3	10.5°	0,30	39700
2623938	32A03R050B32SED14	32	32	111	50	14,5	3	6.8°	0,55	33300
2478642	32A04R050B32SED14	32	32	111	50	14,5	4	6.8°	0,56	33300
2623939	40A04R050B32SED14	40	32	111	50	14,3	4	4.8°	0,71	28700

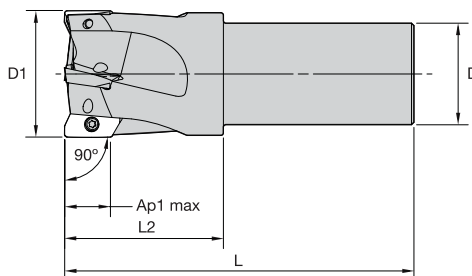
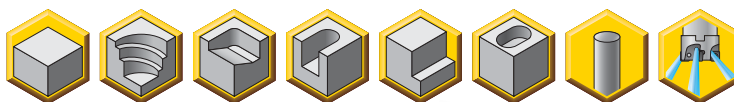
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts



D1	insert screw	Nm	Torx Plus driver
20	MS2167	2,3	DT9IP
25	MS2166	2,3	DT9IP
32	MS2166	2,3	DT9IP
40	MS2166	2,3	DT9IP

- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Cylindrical End Mills

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	max ramp angle	kg	max RPM
3345674	20A02R039A20SED14	20	20	90	39	14,7	2	16.6°	0,17	47500
2968363	20A02R050A20SED14-170	20	20	170	50	14,7	2	16.6°	0,34	47500
3345675	25A02R044A25SED14	25	25	100	44	14,6	2	10.5°	0,31	39700
2968367	25A02R050A25SED14-170	25	25	170	50	14,6	2	10.5°	0,56	39700
3345676	25A03R044A25SED14	25	25	100	44	14,6	3	10.5°	0,31	39700
2968364	25A03R050A25SED14-170	25	25	170	50	14,6	3	10.5°	0,56	39700
3345677	32A03R050A25SED14	32	25	107	50	14,6	3	6.8°	0,39	33300
3345678	32A04R050A25SED14	32	25	107	50	14,6	4	6.8°	0,41	33300
3348765	32A03R050A32SED14	32	32	110	50	14,5	3	6.8°	0,55	33300
2968368	32A03R050A32SED14-200	32	32	200	50	14,6	3	6.8°	1,10	33300
3348766	32A04R050A32SED14	32	32	110	50	14,5	4	6.8°	0,56	33300
2968365	32A04R050A32SED14-200	32	32	200	50	14,6	4	6.8°	1,11	33300
3348767	40A04R050A32SED14	40	32	110	50	14,5	4	4.8°	0,71	28700
2968369	40A04R050A32SED14-200	40	32	200	50	14,4	4	4.8°	1,26	28700
2968366	40A05R050A32SED14-200	40	32	200	50	14,4	5	4.8°	1,25	28700

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts



insert screw



Nm

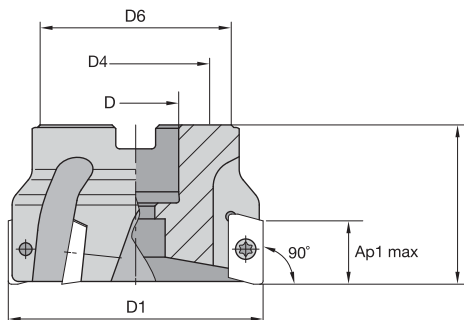
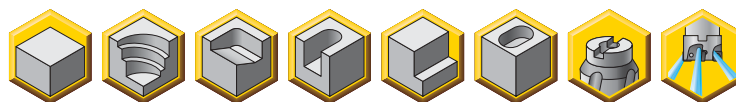


Torx Plus driver

D1	insert screw	Nm	Torx Plus driver
20	MS2167	2,3	DT9IP
25	MS2166	2,3	DT9IP
32	MS2166	2,3	DT9IP
40	MS2166	2,3	DT9IP



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- High RPM capabilities.



■ Shell Mills

order number	catalogue number	D1	D	D4	D6	L	Ap1 max	Z	max ramp angle	kg	max RPM
2623940	40A04RS90ED14D	40	16	—	37	40	14,3	4	4.8°	0,21	28700
2623934	40A05RS90ED14D	40	16	—	37	40	14,3	5	4.8°	0,21	28700
2623941	50A05RS90ED14D	50	22	—	45	40	14,0	5	3.5°	0,30	25000
2478686	50A06RS90ED14D	50	22	—	45	40	14,0	6	3.5°	0,29	25000
2623942	63A06RS90ED14D	63	22	—	50	40	14,0	6	2.5°	0,49	21800
2478689	63A07RS90ED14D	63	22	—	50	40	14,0	7	2.5°	0,48	21800
2623963	80A07RS90ED14D	80	27	—	60	50	14,0	7	1.9°	1,00	19000
2478690	80A09RS90ED14D	80	27	—	60	50	14,0	9	1.9°	1,00	19000
2623964	100A08RS90ED14D	100	32	—	80	50	14,2	8	1.5°	1,80	16800
2623935	100A10RS90ED14D	100	32	—	80	50	14,2	10	1.5°	1,81	16800
2510390	125B09RS90ED14D	125	40	—	90	63	14,1	9	1.2°	2,64	14900
2623936	125B12RS90ED14D	125	40	—	90	63	14,1	12	1.2°	2,66	14900
2623965	160C11RS90ED14D	160	40	66,7	100	63	14,1	11	.9°	3,64	13100

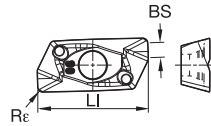
NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	mounting screw	lock screw	coolant shower plate
40	MS2166	2,3	DT9IP	MS1294	—	—
50	MS2166	2,3	DT9IP	—	—	—
63	MS2166	2,3	DT9IP	—	—	—
80	MS2166	2,3	DT9IP	MS2038	—	—
100	MS2166	2,3	DT9IP	MS1559	—	—
125	MS2166	2,3	DT9IP	—	420.200	470.232
160	MS2166	2,3	DT9IP	—	420.200	470.233

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2				◆◆	◇◇							
P3-P4				◆◆	◇	◇◇						
P5-P6				◆◆	◇	◇◇						
M1-M2				◆		◆					◆◆	
M3				◆							◆◆	
K1-K2				◆◆/◇◇		◇						
K3				◆◆		◇◇						
N1	◆◆	◆										
N2	◆◆	◆										
S1						◆						◆◆
S2						◆						◆◆
S3						◆						◆◆
S4						◆						◆◆



ISO catalogue number	LI	BS	Re	KC410M	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining										
EDCT140402PDFRLDJ	17,46	3,14	0,2	3273589	-	-	-	-	-	-
EDCT140404PDERGD	17,46	2,95	0,4	-	-	-	2983890	-	5545068	-
EDCT140404PDFRLDJ	17,46	2,95	0,4	2984054	-	-	-	-	-	-
EDCT140408PDERGD	17,47	2,56	0,8	-	-	-	2983331	-	5545067	6171518
EDCT140408PDFRLDJ	17,47	2,56	0,8	2983279	-	-	-	-	-	-
EDCT140412PDERGD	17,48	2,17	1,2	-	-	-	2984210	-	-	6171519
EDCT140416PDERGD	17,49	1,77	1,6	-	-	-	2984773	-	-	6171520
EDCT140431PDERGD	17,50	0,26	3,1	-	-	-	2983891	-	-	6171591



General Machining										
EDCT140404PDERLDJ	17,46	2,95	0,4	-	3324993	-	-	-	-	-
EDPT140404PDERHD	17,46	2,95	0,4	-	-	3051866	3051863	-	-	-
EDPT140404PDERHD	17,47	2,95	0,4	-	-	-	-	-	6128132	-
EDCT140408PDERLDJ	17,47	2,56	0,8	-	3324994	-	-	-	-	-
EDPT140408PDERHD	17,47	2,56	0,8	-	-	3033727	3033729	3033731	5545160	6172122
EDPT140412PDERHD	17,48	2,16	1,2	-	-	3032732	3033724	-	-	6172123
EDPT140412PDERHD	17,48	2,17	1,2	-	-	-	-	-	5545069	-
EDPT140416PDERHD	17,49	1,77	1,6	-	-	-	3033752	3033954	6128134	6172124
EDPT140420PDERHD	17,49	1,37	2,0	-	-	-	3051245	-	-	6172125
EDCT140424PDERLDJ	17,50	0,99	2,4	-	3324726	-	-	-	-	-
EDPT140424PDERHD	17,50	0,99	2,4	-	-	-	3051550	-	6128136	6172126
EDPT140431PDERHD	17,51	0,26	3,1	-	-	-	3051248	-	-	6172127
EDPT140440PDERHD	16,53	-	4,0	-	-	-	3051251	-	-	6172128



Heavy Machining										
EDPT140408PDSRGD	17,47	2,55	0,8	-	-	2980530	2981644	2980531	6128133	6172129
EDPT140412PDSRGD	17,47	2,17	1,2	-	-	-	-	-	5545066	-
EDPT140412PDSRGD	17,48	2,17	1,2	-	-	2980527	2980568	-	-	6172130
EDPT140416PDSRGD	17,49	1,77	1,6	-	-	-	2982077	2982091	6128135	6172191

Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,12	0,46	0,82	0,08	0,33	0,59	0,06	0,25	0,44	0,06	0,22	0,38	0,05	0,20	0,35	.F..LDJ
.E..LDJ	0,12	0,47	0,82	0,08	0,34	0,59	0,06	0,26	0,44	0,06	0,22	0,39	0,05	0,20	0,35	.E..LDJ
.E..LD	0,12	0,46	0,81	0,09	0,33	0,58	0,07	0,25	0,43	0,06	0,22	0,38	0,05	0,20	0,35	.E..LD
.E..GD	0,17	0,52	0,89	0,12	0,38	0,64	0,09	0,28	0,48	0,08	0,24	0,42	0,07	0,22	0,38	.E..GD
.S..GE	0,23	0,51	0,89	0,17	0,37	0,64	0,13	0,27	0,48	0,11	0,24	0,42	0,10	0,22	0,38	.S..GE
.S..GD	0,23	0,50	0,88	0,17	0,36	0,63	0,13	0,27	0,47	0,11	0,24	0,41	0,10	0,22	0,38	.S..GD
.S..GD2	0,23	0,50	0,88	0,17	0,36	0,63	0,13	0,27	0,47	0,11	0,24	0,41	0,10	0,22	0,38	.S..GD2
.E..HD	0,23	0,59	0,95	0,17	0,43	0,68	0,13	0,32	0,51	0,11	0,28	0,44	0,10	0,25	0,41	.E..HD
.E..HD2	0,21	0,59	0,95	0,15	0,43	0,68	0,11	0,32	0,51	0,10	0,28	0,44	0,09	0,25	0,41	.E..HD2

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- .F.LDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
 - .E.LDJ: For aluminium and other non-ferrous alloys.
 - .E.GD: Finishing and high-precision applications.
 - .E.HD: Medium roughing and semi-finishing.
 - .S.GD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.
- kennametal.com



Material Group		KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	260	230	215	455	395	370	295	260	245	260	230	215
	2	-	-	-	220	190	160	280	255	230	250	215	180	220	190	160
	3	-	-	-	200	170	140	255	230	205	230	195	160	200	170	140
	4	-	-	-	180	150	120	190	175	160	205	170	135	180	150	120
	5	-	-	-	150	135	120	260	230	210	170	155	135	150	135	120
	6	-	-	-	130	100	80	160	135	125	150	115	90	130	100	80
M	1	-	-	-	170	150	135	205	185	155	195	170	155	170	150	135
	2	-	-	-	155	130	110	185	160	140	175	150	125	155	130	110
	3	-	-	-	115	100	80	145	130	115	130	115	90	115	100	80
K	1	270	245	215	-	-	-	295	265	240	-	-	-	-	-	-
	2	210	190	175	-	-	-	235	210	190	-	-	-	-	-	-
	3	175	160	145	-	-	-	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M/KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
P	1	- - -	- - -	210 185 170	365 315 295	285 250 235	- - -
	2	- - -	- - -	175 150 130	225 205 185	240 210 170	- - -
	3	- - -	- - -	160 135 110	205 185 165	220 190 150	- - -
	4	- - -	- - -	145 120 95	150 140 130	195 165 130	- - -
	5	- - -	- - -	120 110 95	210 185 170	165 150 130	135 115 95
	6	- - -	- - -	105 80 65	130 110 100	145 110 90	120 90 65
M	1	- - -	- - -	135 120 110	165 150 125	190 165 150	170 135 110
	2	- - -	- - -	125 105 90	150 130 110	170 145 120	145 115 95
	3	- - -	- - -	90 80 65	115 105 90	125 110 90	115 90 70
K	1	- - -	215 195 170	- - -	235 210 190	- - -	- - -
	2	- - -	170 150 140	- - -	190 170 150	- - -	- - -
	3	- - -	140 130 115	- - -	155 140 130	- - -	- - -
N	1	1170 1035 840	- - -	- - -	- - -	- - -	- - -
	2	1035 955 730	- - -	- - -	- - -	- - -	- - -
	3	1035 955 730	- - -	- - -	- - -	- - -	- - -
S	1	- - -	- - -	30 25 20	- - -	40 30 30	30 30 20
	2	- - -	- - -	30 25 20	- - -	40 30 30	30 30 20
	3	- - -	- - -	35 30 20	- - -	50 40 30	40 30 20
	4	- - -	- - -	45 35 25	55 40 25	65 50 30	50 40 25
H	1	- - -	- - -	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -

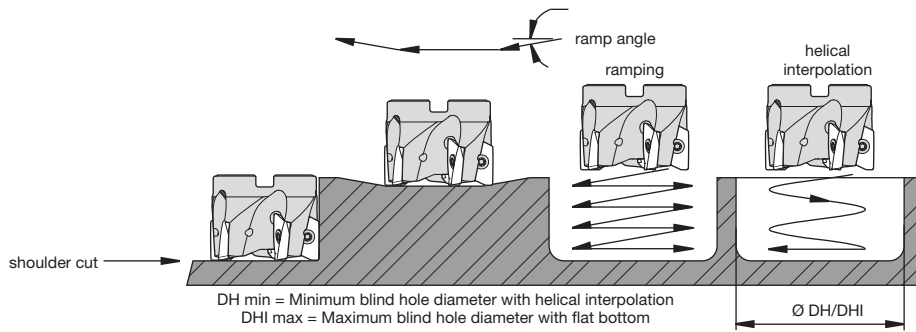
NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry

Wet



Application Examples



insert style	cutting diameter	max ramp angle	DH min (min hole diameter)	DHI min (min flat-bottomed hole diameter)	max diameter
Mill 1-14	20	16°	23,74	35,62	40
Mill 1-14	25	11°	33,75	44,44	50
Mill 1-14	32	7°	47,80	59,79	64
Mill 1-14	40	5°	63,76	75,22	80
Mill 1-14	50	4°	83,96	96,05	100
Mill 1-14	63	3°	109,93	121,47	126
Mill 1-14	80	2°	143,91	155,47	160
Mill 1-14	100	1°	183,89	199,47	200
Mill 1-14	125	1°	233,88	245,47	250
Mill 1-14	160	1°	303,88	315,47	320

NOTE: Max ramp angle decreases as nose radius increases.

➤ Mill 1-14™

Helical Cutters

Primary Application

Mill 1-14 helical cutters will increase axial depth of cut. Designed with axial support pins for added stability, the Mill 1-14 helical cutters feature essential Load-Optimised Insert Spacing™ (LOIS) technology. LOIS dramatically minimises unwanted vibrations and fluctuations in power requirements, resulting in a much smoother-sounding cut. Up to nine different coolant nozzle diameters enable tailoring to suit each machine tool, providing remarkably consistent, focused coolant flow.

Features and Benefits

Functions

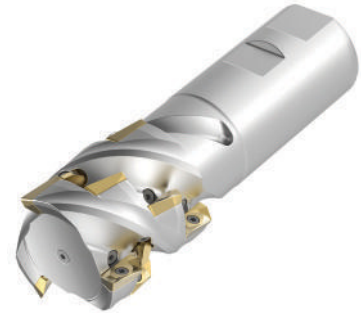
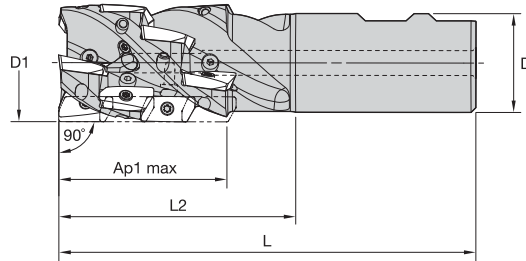
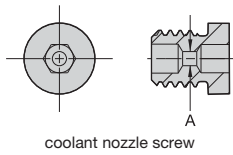
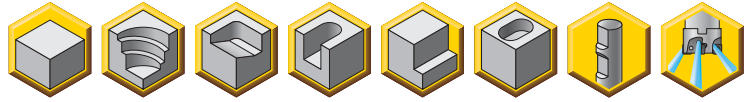
- Improves axial depth of cut better than standard end mills due to the positioning of inserts in helical configuration.
- Up to nine different coolant nozzle diameters tailored to suit each machine tool.
- One tool that offers features common to end mills, but rarely seen on a helical cutter: Helical ramping from solid, slotting, contouring, ramping, and plunging.

Benefits

- Increases depth of cut.
- Consistent, focused coolant flow.
- Built for performance, accuracy, and versatility.



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.



■ Helical Weldon End Mills • Slot and Profile

order number	catalogue number	D1	D	L	L2	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3742932	M1H32J2R50B32S90ED14C4	32	32	111	50	27,8	4	2	6.8°	0,52	31100
3743033	M1H40J3R50B32S90ED14C6	40	32	111	50	27,5	6	3	4.8°	0,59	28400
3743034	M1H40J3R65B32S90ED14C9	40	32	126	65	40,8	9	3	4.8°	0,66	28400
3743035	M1H40J3R80B32S90ED14C12	40	32	141	80	54,0	12	3	4.8°	0,73	28400
5085631	M1H40J4R80B32S90ED14C12	40	32	141	80	40,8	12	4	4.8°	0,75	28400
3743038	M1H50J3R80B40S90ED14C12	50	40	151	80	53,5	12	3	3.5°	1,30	24600

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
32	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20
50	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

■ Helical Weldon Mills • Profile Only

order number	catalogue number	D1	D	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
5085631	M1H40J4R80B32S90ED14C12	40	32	141	40,8	12	4	4.8°	0,75	28400

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	coolant nozzle screw
40	MS2148	2,3	DT9IP	ASPM07001802	MS2191C20

■ Optional Coolant Nozzle Screw



order number	catalogue number	A
3400611	MS2191C00	—
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

■ Coolant Nozzle Key

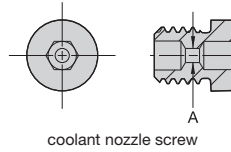
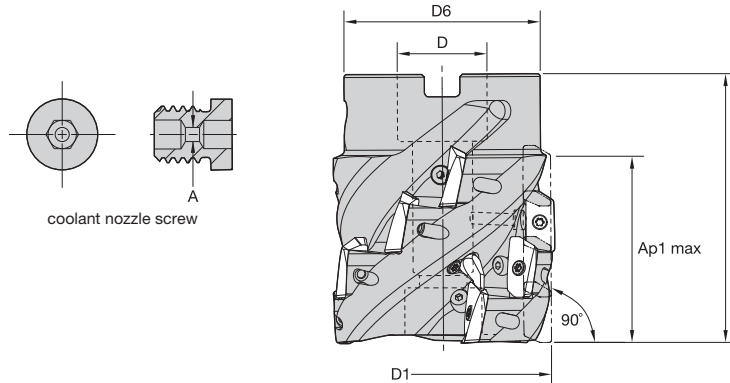
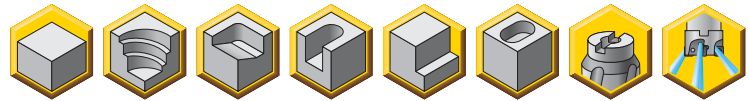


order number	catalogue number	drive size
1993552	THW2M	2 MM

NOTE: Check the spare parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter.
This gives flexibility with coolant flow.



- Aggressive ramping rates.
- Generates superior surface finish.
- Mill 90° walls.
- Axial support pins.
- Unique coolant nozzles.



■ Helical Shell Mills • Slot and Profile

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3743036	M1H50T3R50A22S90ED14C6	50	22	46	50	27,3	6	3	3.5°	0,43	24600
3743037	M1H50T3R65A22S90ED14C9	50	22	46	65	40,4	9	3	3.5°	0,57	24600
3743042	M1H63T3R75A27S90ED14C12	63	27	60	75	52,8	12	3	2.5°	1,16	22000
3743041	M1H63T4R65A27S90ED14C12	63	27	60	65	39,9	12	4	2.5°	0,97	22000

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

order number	D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
3743036	50	MS2148	2,3	DT9IP	ASPM07001802	MS1235	MS2191C20
3743037	50	MS2148	2,3	DT9IP	ASPM07001802	MS1233	MS2191C16
3743042	63	MS2148	2,3	DT9IP	ASPM07001802	MS1433	MS2191C16
3743041	63	MS2148	2,3	DT9IP	ASPM07001802	MS1238	MS2191C16

■ Helical Shell Mills • Profile Only

order number	catalogue number	D1	D	D6	L	Ap1 max	Z	Z U	max ramp angle	kg	max RPM
3831819	M1H63T5R75A27S90ED14C20	63	27	60	75	52,8	20	5	2.0°	1,06	22000

NOTE: Standard milling cutters will accept insert nose radii up to 2mm without modification.

■ Spare Parts

D1	insert screw	Nm	Torx Plus driver	pin	socket-head cap screw	coolant nozzle screw
63	MS2148	2,3	DT9IP	ASPM07001802	MS1433	MS2191C12

■ Optional Coolant Nozzle Screw



order number	catalogue number	A
3400611	MS2191C00	—
3400612	MS2191C06	0,6
3400613	MS2191C08	0,8
3400614	MS2191C10	1,0
3400616	MS2191C12	1,2
3400617	MS2191C14	1,4
3400618	MS2191C16	1,6
3400619	MS2191C18	1,8
3400620	MS2191C20	2,0

■ Coolant Nozzle Key

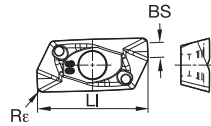


order number	catalogue number	drive size
1993552	THW2M	2 MM

NOTE: Check the spare parts table for the coolant hole size that is incorporated in the cutters.
If you need an alternative, there are eight other variants to choose from to increase or decrease the pressure.
Example: MS2191C12 is a 1,20mm hole. All coolant nozzles are interchangeable with the original that is supplied with the cutter.
This gives flexibility with coolant flow.



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2				◆◆	◇◇					
P3-P4				◆◆	◇	◇◇				
P5-P6				◆◆	◇	◇◇				
M1-M2				◆		◆			◆◆	
M3				◆					◆◆	
K1-K2			◆◆/◇◇		◇					
K3			◆◆		◇◇					
N1	◆◆	◆								
N2	◆◆	◆								
S1				◆					◆◆	
S2				◆					◆◆	
S3				◆					◆◆	
S4				◆					◆◆	

ISO catalogue number	LI	BS	Re	KC410M	KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
Light Machining										
EDCT140402PDFRLDJ	17,46	3,14	0,2	3273589	-	-	-	-	-	-
EDCT140404PDERGD	17,46	2,95	0,4	-	-	-	2983890	-	5545068	-
EDCT140404PDFRLDJ	17,46	2,95	0,4	2984054	-	-	-	-	-	-
EDCT140408PDERGD	17,47	2,56	0,8	-	-	-	2983331	-	5545067	6171518
EDCT140408PDFRLDJ	17,47	2,56	0,8	2983279	-	-	-	-	-	-
EDCT140412PDERGD	17,48	2,17	1,2	-	-	-	2984210	-	-	6171519
EDCT140416PDERGD	17,49	1,77	1,6	-	-	-	2984773	-	-	6171520
EDCT140431PDERGD	17,50	0,26	3,1	-	-	-	2983891	-	-	6171591

General Machining										
EDCT140404PDERLDJ	17,46	2,95	0,4	-	3324993	-	-	-	-	-
EDPT140404PDERHD	17,46	2,95	0,4	-	-	3051866	3051863	-	-	-
EDPT140404PDERHD	17,47	2,95	0,4	-	-	-	-	-	6128132	-
EDCT140408PDERLDJ	17,47	2,56	0,8	-	3324994	-	-	-	-	-
EDPT140408PDERHD	17,47	2,56	0,8	-	-	3033727	3033729	3033731	5545160	6172122
EDPT140412PDERHD	17,48	2,16	1,2	-	-	3032732	3033724	-	-	6172123
EDPT140412PDERHD	17,48	2,17	1,2	-	-	-	-	-	5545069	-
EDPT140416PDERHD	17,49	1,77	1,6	-	-	-	3033752	3033954	6128134	6172124
EDPT140420PDERHD	17,49	1,37	2,0	-	-	-	3051245	-	-	6172125
EDCT140424PDERLDJ	17,50	0,99	2,4	-	3324726	-	-	-	-	-
EDPT140424PDERHD	17,50	0,99	2,4	-	-	-	3051550	-	6128136	6172126
EDPT140431PDERHD	17,51	0,26	3,1	-	-	-	3051248	-	-	6172127
EDPT140440PDERHD	16,53	-	4,0	-	-	-	3051251	-	-	6172128

Heavy Machining										
EDPT140408PDSRGD	17,47	2,55	0,8	-	-	2980530	2981644	2980531	6128133	6172129
EDPT140412PDSRGD	17,47	2,17	1,2	-	-	-	-	-	5545066	-
EDPT140412PDSRGD	17,48	2,17	1,2	-	-	2980527	2980568	-	-	6172130
EDPT140416PDSRGD	17,49	1,77	1,6	-	-	-	2982077	2982091	6128135	6172191

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.F..LDJ	0,12	0,46	0,82	0,08	0,33	0,59	0,06	0,25	0,44	0,06	0,22	0,38	0,05	0,20	0,35	.F..LDJ
.E..LDJ	0,12	0,47	0,82	0,08	0,34	0,59	0,06	0,26	0,44	0,06	0,22	0,39	0,05	0,20	0,35	.E..LDJ
.E..LD	0,12	0,46	0,81	0,09	0,33	0,58	0,07	0,25	0,43	0,06	0,22	0,38	0,05	0,20	0,35	.E..LD
.E..GD	0,17	0,52	0,89	0,12	0,38	0,64	0,09	0,28	0,48	0,08	0,24	0,42	0,07	0,22	0,38	.E..GD
.S..GE	0,23	0,51	0,89	0,17	0,37	0,64	0,13	0,27	0,48	0,11	0,24	0,42	0,10	0,22	0,38	.S..GE
.S..GD	0,23	0,50	0,88	0,17	0,36	0,63	0,13	0,27	0,47	0,11	0,24	0,41	0,10	0,22	0,38	.S..GD
.S..GD2	0,23	0,50	0,88	0,17	0,36	0,63	0,13	0,27	0,47	0,11	0,24	0,41	0,10	0,22	0,38	.S..GD2
.E..HD	0,23	0,59	0,95	0,17	0,43	0,68	0,13	0,32	0,51	0,11	0,28	0,44	0,10	0,25	0,41	.E..HD
.E..HD2	0,21	0,59	0,95	0,15	0,43	0,68	0,11	0,32	0,51	0,10	0,28	0,44	0,09	0,25	0,41	.E..HD2

EDC...: Ground inserts; high versatility for all finishing applications and difficult-to-machine stainless steels and high-temp alloys.
EDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

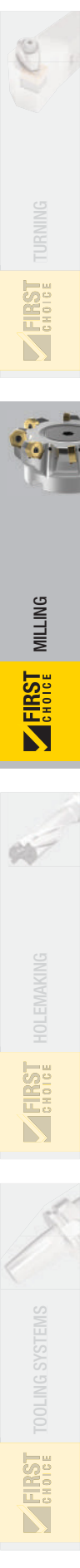
- .FLDJ: Sharp cutting edge for aluminium and other non-ferrous alloys.
- .ELDJ: For aluminium and other non-ferrous alloys.
- .EGD: Finishing and high-precision applications.
- .EHD: Medium roughing and semi-finishing.
- .SGD: Strongest cutting edge for heavy roughing applications with high feed rates in all material groups.

Recommended Starting Speeds for Dry Machining (m/min)

Material Group		KC520M			KC725M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	260	230	215	455	395	370	295	260	245	260	230	215
	2	-	-	-	220	190	160	280	255	230	250	215	180	220	190	160
	3	-	-	-	200	170	140	255	230	205	230	195	160	200	170	140
	4	-	-	-	180	150	120	190	175	160	205	170	135	180	150	120
	5	-	-	-	150	135	120	260	230	210	170	155	135	150	135	120
	6	-	-	-	130	100	80	160	135	125	150	115	90	130	100	80
M	1	-	-	-	170	150	135	205	185	155	195	170	155	170	150	135
	2	-	-	-	155	130	110	185	160	140	175	150	125	155	130	110
	3	-	-	-	115	100	80	145	130	115	130	115	90	115	100	80
K	1	270	245	215	-	-	-	295	265	240	-	-	-	-	-	-
	2	210	190	175	-	-	-	235	210	190	-	-	-	-	-	-
	3	175	160	145	-	-	-	195	175	160	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold type**.
As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet

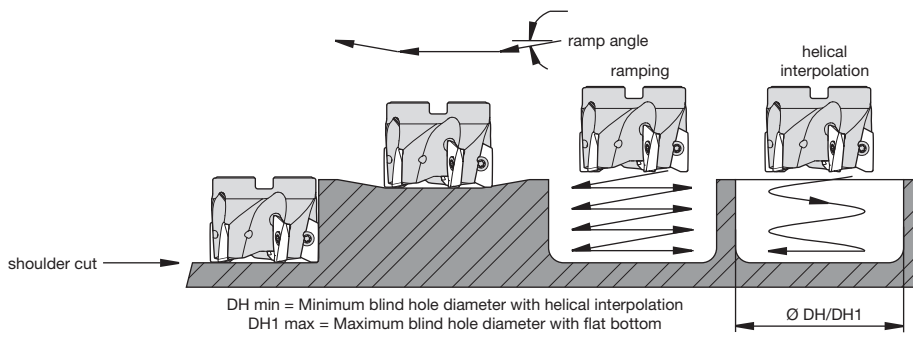


Material Group		KC410M/KC422M	KC520M	KC725M	KCPK30	KCPM40	KCSM40
P	1	- - -	- - -	210 185 170	365 315 295	285 250 235	- - -
	2	- - -	- - -	175 150 130	225 205 185	240 210 170	- - -
	3	- - -	- - -	160 135 110	205 185 165	220 190 150	- - -
	4	- - -	- - -	145 120 95	150 140 130	195 165 130	- - -
	5	- - -	- - -	120 110 95	210 185 170	165 150 130	135 115 95
	6	- - -	- - -	105 80 65	130 110 100	145 110 90	120 90 65
M	1	- - -	- - -	135 120 110	165 150 125	190 165 150	170 135 110
	2	- - -	- - -	125 105 90	150 130 110	170 145 120	145 115 95
	3	- - -	- - -	90 80 65	115 105 90	125 110 90	115 90 70
K	1	- - -	215 195 170	- - -	235 210 190	- - -	- - -
	2	- - -	170 150 140	- - -	190 170 150	- - -	- - -
	3	- - -	140 130 115	- - -	155 140 130	- - -	- - -
N	1	1170 1035 840	- - -	- - -	- - -	- - -	- - -
	2	1035 955 730	- - -	- - -	- - -	- - -	- - -
	3	1035 955 730	- - -	- - -	- - -	- - -	- - -
S	1	- - -	- - -	30 25 20	- - -	40 30 30	30 30 20
	2	- - -	- - -	30 25 20	- - -	40 30 30	30 30 20
	3	- - -	- - -	35 30 20	- - -	50 40 30	40 30 20
	4	- - -	- - -	45 35 25	55 40 25	65 50 30	50 40 25
H	1	- - -	- - -	- - -	- - -	- - -	- - -
	2	- - -	- - -	- - -	- - -	- - -	- - -
	3	- - -	- - -	- - -	- - -	- - -	- - -

NOTE: FIRST choice starting speeds are in **bold** type.
 As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet

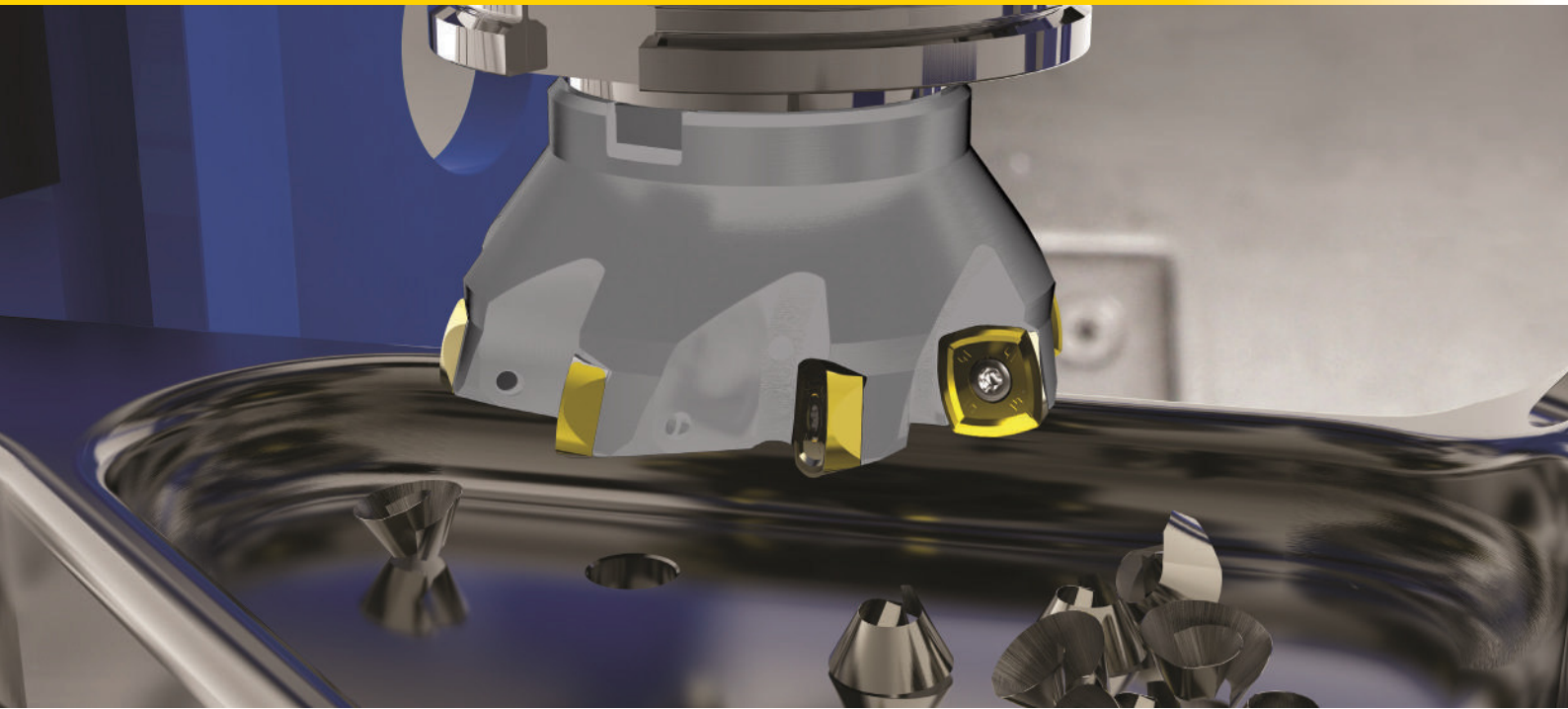
■ Application Examples



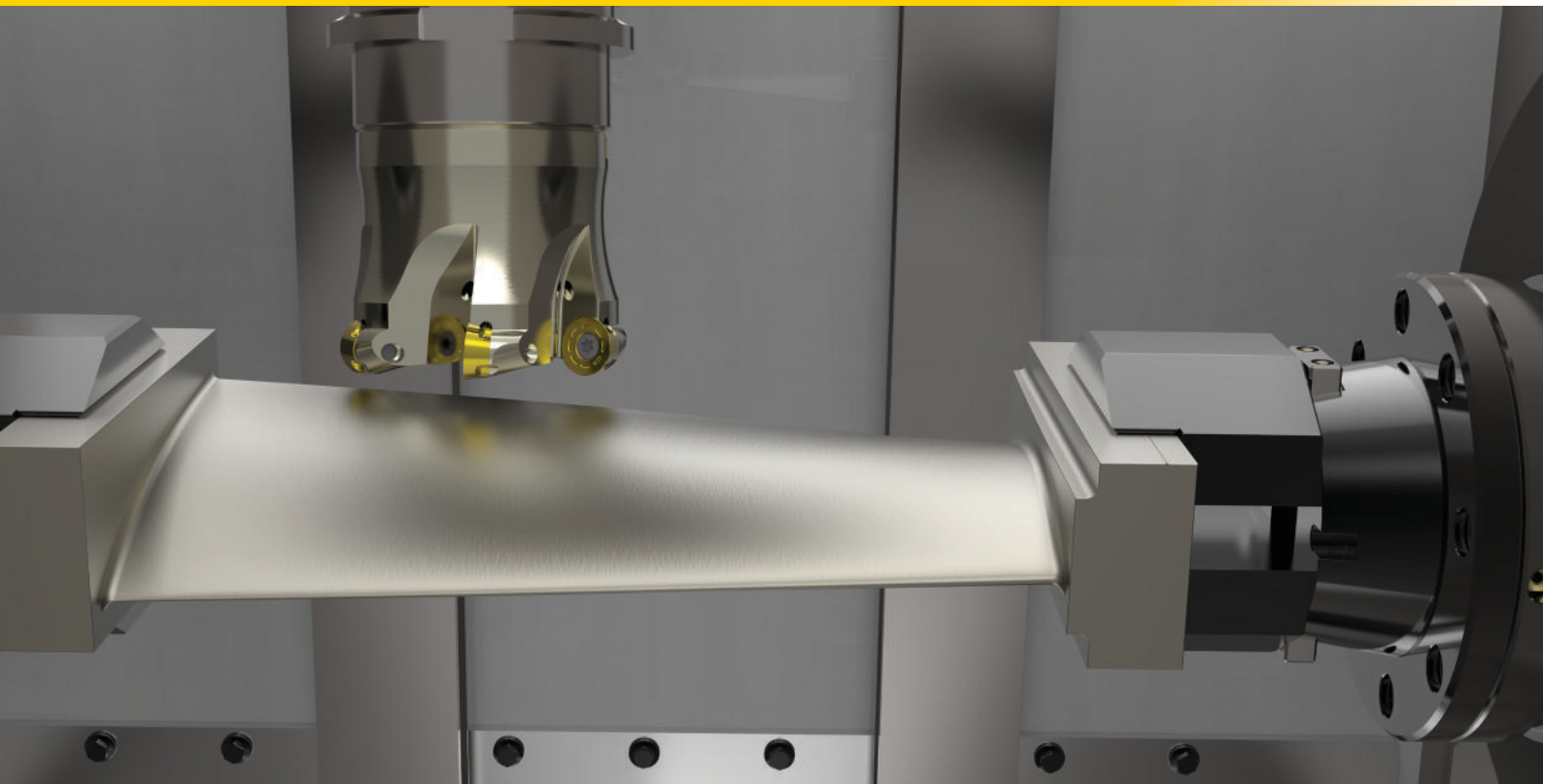
insert style	cutting diameter	max ramp angle	min hole diameter (DH min)	max flat-bottom hole diameter (DH1 max)	max diameter
Mill 1-14	32	5.4°	47,80	59,79	64
Mill 1-14	40	3.8°	64,00	75,47	80
Mill 1-14	50	2.7°	83,96	96,05	100
Mill 1-14	63	1.9°	109,93	121,47	126



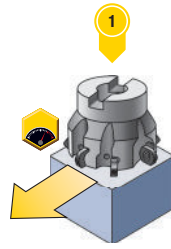
High-Feed Milling



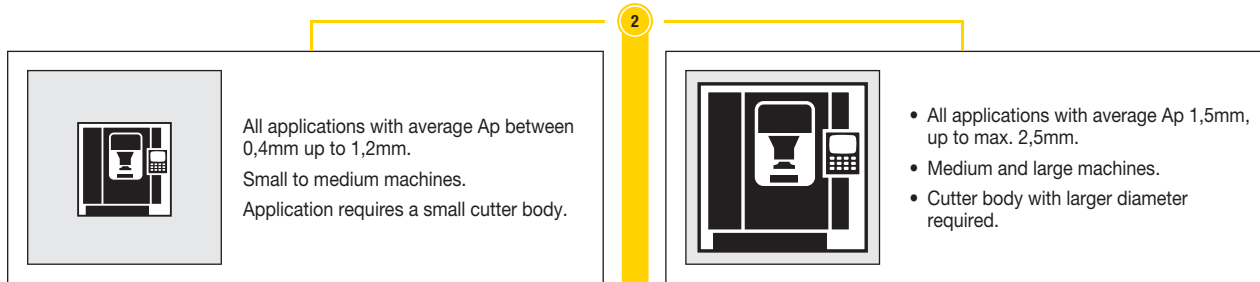
Copy/Contour Milling



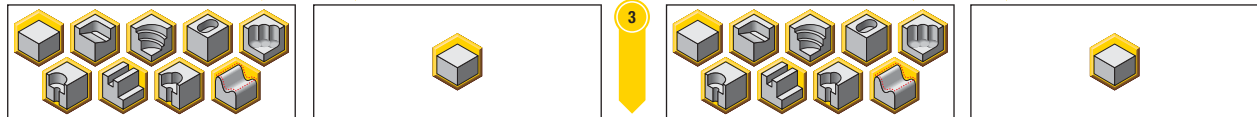
Application



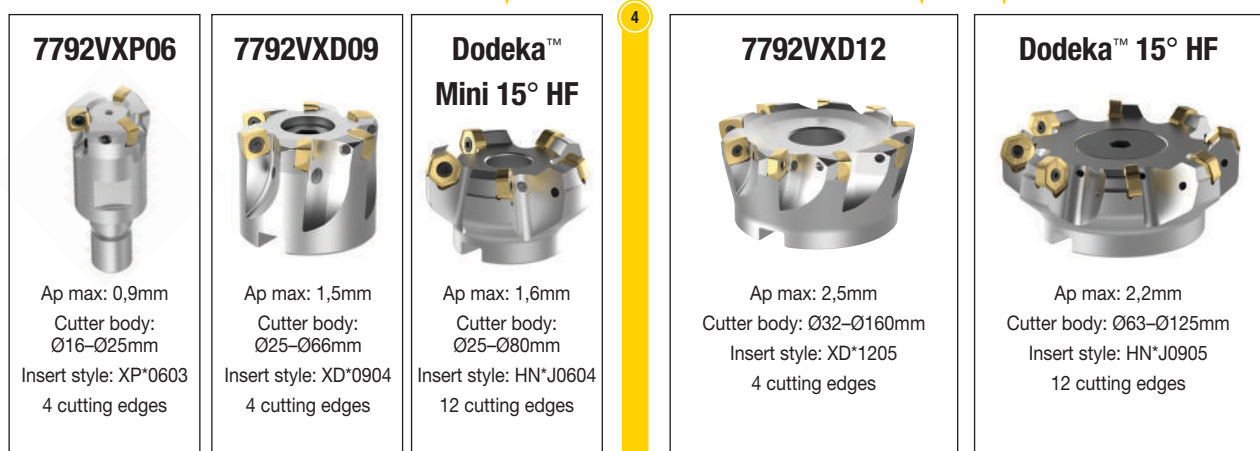
Machining Conditions and Spindle Size



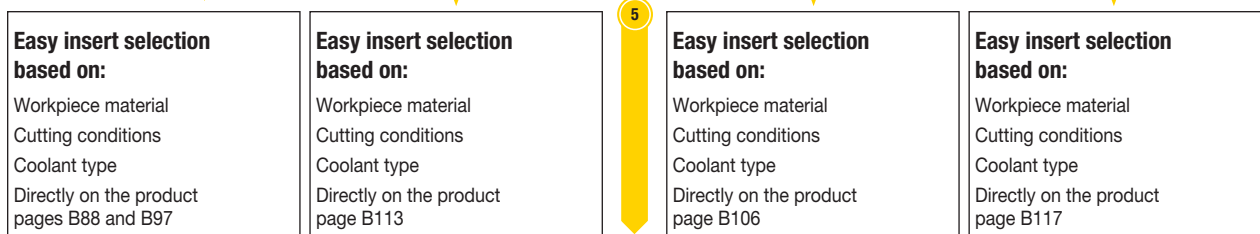
Capabilities



Platform



Insert Selection



Tech Tips:

- HF-cutters also have a tremendous advantage when used in long (extended) toolholders. These cutters greatly reduce the instability and deflection of the tool.
- Consider 7792 series for all high-feed 3D milling and machining close to a wall.
- Benefit from 12 cutting edges per Dodeka insert at all pure high-feed face milling operations.
- To optimise the tool, adjust depth of cut (A_p) and cutting speed (v_c), if necessary. Always keep feed rate on a high level.



➤ Stellram® 7792 High-Feed Series

Indexable Milling

The 7792 cutter series has been designed for high-feed milling applications with superior surface generation. 7792VX cutters are designed for a wide range of applications, including facing, pocketing, ramping, helical interpolation, and plunging. They are capable of machining all materials, including steel, stainless steel, cast iron, and high-temperature and aluminium alloys.



Features and Benefits

- The 7792VX high-feed cutters are the best solution for reducing cycle times or removing the maximum amount of material in the shortest time.
- New ultra-fine pitch cutters further increase metal removal rates, especially in high-temp alloys.
- The unique design and insert positioning help to achieve up to 5x higher feed rates than other cutters on the market.
- When used in long (extended) toolholders, 7792VX cutters absorb vibrations and greatly reduce instability and tool deflection.
- Integrated wiper facet for improved surface finish: 16 Ra (1,6 μ) when used at <0,5mm/z.

7792VXP06:

Maximum ap = 0,9mm
Diameter Range = 16-35mm

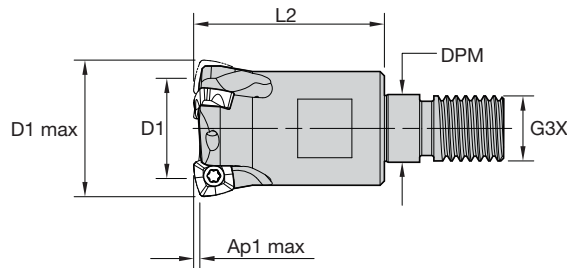
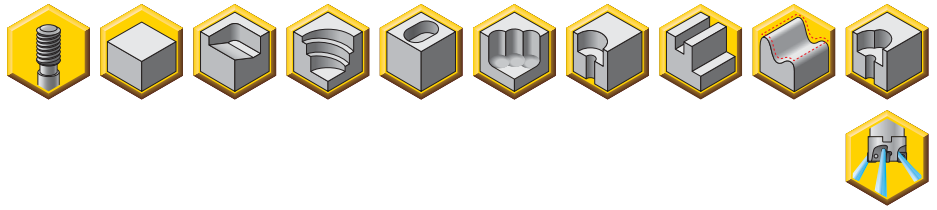
7792VXD09:

Maximum ap = 1,50mm
Diameter Range = 25-66mm

7792VXD12:

Maximum ap = 2,50mm
Diameter Range = 32-160mm

- Superior surface generation with integrated wiper facet.
- Maximum material removal rates.
- Suitable to machine HTA and titanium.



■ 7792VXP06 Modular Head • Screw-On

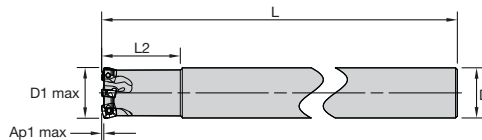
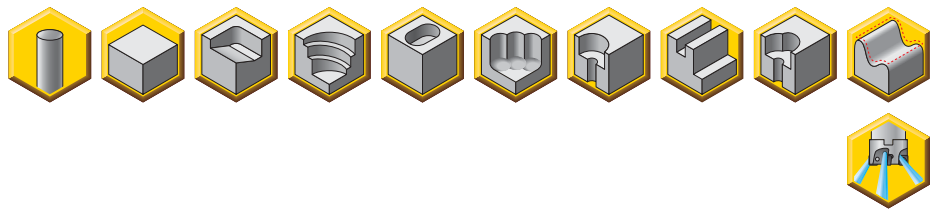
order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5681105	7792VXP06SA016Z2R25	16	8	25	M8	8,50	0,90	2
5681122	7792VXP06SA020Z3R35	20	12	35	M10	10,50	0,90	3
5665964	7792VXP06SA025Z3R35	25	17	35	M12	12,50	0,90	3
5667023	7792VXP06SA025Z4R35	25	17	35	M12	12,50	0,90	4

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXP06SA016Z2R25	FP2506T	0,8	TP7
7792VXP06SA020Z3R35	FP2506T	0,8	TP7
7792VXP06SA025Z3R35	FP2507T	0,8	TP7
7792VXP06SA025Z4R35	FP2507T	0,8	TP7



- Superior surface generation with integrated wiper facet.
- Maximum material removal rates.
- Suitable to machine HTA and titanium.



■ 7792VXP06 Cylindrical Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5673240	7792VXP06CA016Z2R140	16	16	8	188	25	0,90	2
5673237	7792VXP06CA020Z3R154	20	20	11	200	32	0,90	3
5666409	7792VXP06CA025Z4R154	25	25	16	210	40	0,90	4

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXP06CA016Z2R140	FP2506T	0,8	TP7
7792VXP06CA020Z3R154	FP2506T	0,8	TP7
7792VXP06CA025Z4R154	FP2507T	0,8	TP7



■ Technical Information (mm)

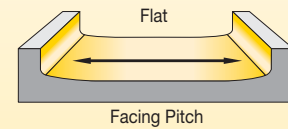
order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole		ap max helical/linear	a _e max plunging	
5673240	7792VXP06CA016Z2R140	7,60	5,9	22	30	0,60	3,00	65000
5673237	7792VXP06CA020Z3R154	11,60	3,4	30	38	0,60	3,00	57000
5666409	7792VXP06CA025Z4R154	16,60	2,2	40	48	0,60	3,00	49000
5681105	7792VXP06SA016Z2R25	7,60	5,9	22	30	0,60	3,00	65000
5681122	7792VXP06SA020Z3R35	11,6	3,4	30	38	0,60	3,00	57000
5665964	7792VXP06SA025Z3R35	16,60	2,8	40	48	0,60	3,00	49000
5667023	7792VXP06SA025Z4R35	16,60	2,2	40	48	0,60	3,00	49000



Helical Interpolation



Plunging



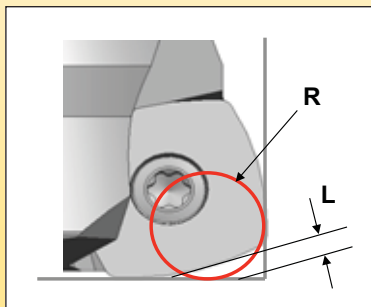
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilising full-face contact.

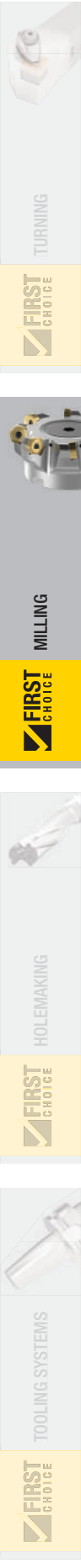
■ CNC Programme • Corner Radius Definition

The use of common CAD/CAM systems requires a round insert dimension to be known for cavity machining. This is available with 7792VX cutters as shown below and in the reference table.

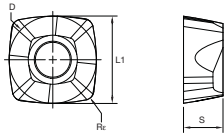
For finish pass applications:
Wiper Facet for finishing use max feed 0,5 mm/z



Programming Data (mm)			
Insert corner nose size (IC)	R _e	R	L
06	0,80	1,37	0,40
	1,20	2,27	0,67
09	0,80	2,50	1,02
	1,20	2,73	0,97



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2	◇/◆	◇◇	◆◆		
P3-P4		◇◇	◆◆		
P5-P6		◇	◆◆	◇◇	◇/◆
M1-M2	◆◆		◇◇		◆
M3	◆		◆		◆◆
K1-K2		◇	◆◆		
K3		◇	◆◆		
N1					
N2					
S1	◆		◆		◆◆
S2	◆		◆		◆◆
S3	◆◆		◆		◆
S4	◆◆		◆		◆



ISO catalogue number	D	LI	S	Rε	KCSM40	SC6525	SP6519	X400	X500
General Machining									
XPLT060308ERD41	7,00	7,00	3,17	0,8	-	5655265	5654267	5654377	5654397
XPPT060308ERD41	7,00	7,00	3,17	0,8	6185769	-	-	-	-

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

■ Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining
-----------------	-----------------	-----------------

At 0,90 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.E..D41	0,37	1,06	1,89	0,27	0,73	1,24	0,20	0,53	0,89	0,17	0,46	0,77	0,16	0,42	0,70	.E..D41
.S..D	0,68	1,46	2,35	0,48	0,98	1,49	0,36	0,71	1,07	0,31	0,62	0,92	0,28	0,56	0,84	.S..D

At 0,70 Axial Depth of Cut (ap)

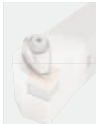
Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.E..D41	0,42	1,21	2,20	0,30	0,83	1,41	0,22	0,60	1,01	0,19	0,52	0,87	0,18	0,48	0,79	.E..D41
.S..D	0,78	1,68	2,79	0,55	1,12	1,71	0,40	0,81	1,21	0,35	0,70	1,04	0,32	0,64	0,94	.S..D

At 0,60 Axial Depth of Cut (ap)

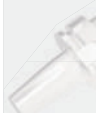
Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.E..D41	0,46	1,32	2,43	0,32	0,89	1,53	0,24	0,65	1,09	0,21	0,56	0,94	0,19	0,52	0,85	.E..D41
.S..D	0,84	1,84	3,12	0,59	1,21	1,85	0,43	0,87	1,30	0,38	0,75	1,12	0,34	0,69	1,02	.S..D

■ Feed Rate Guide • Plunging • IC 06 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz)			Insert Geometry
	Max 3mm insert engagement (ae radial engagement)			
.E..D41	0,06		0,15	.E..D41
.S..D	0,10		0,20	.S..D


 TURNING
FIRST CHOICE

 MILLING
FIRST CHOICE

 HOLEMAKING
FIRST CHOICE

 TOOLING SYSTEMS
FIRST CHOICE



Material Group		KCSM40			SC6525			SP6519			X400			X500		
P	1	275	240	205	445	305	170	355	260	155	310	230	145	325	240	155
	2	240	205	160	390	270	145	310	230	140	275	205	125	290	215	140
	3	205	180	160	350	240	125	275	200	120	240	180	115	250	185	120
	4	180	160	145	250	175	95	210	150	90	180	130	85	190	145	90
	5	160	145	125	190	145	95	170	125	85	-	-	-	155	120	85
	6	125	110	90	170	120	70	145	100	60	-	-	-	130	95	60
M	1	275	220	180	240	215	170	325	235	140	-	-	-	300	220	140
	2	180	145	125	230	190	145	280	205	125	-	-	-	265	190	120
	3	145	125	110	175	155	110	235	170	100	-	-	-	215	155	95
K	1	-	-	-	470	325	175	355	265	170	-	-	-	310	265	205
	2	-	-	-	365	250	140	290	210	130	-	-	-	265	215	155
	3	-	-	-	-	-	-	265	190	120	-	-	-	205	170	120
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	115	85	55	-	-	-
	2	-	-	-	-	-	-	-	-	-	95	70	40	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
Wet



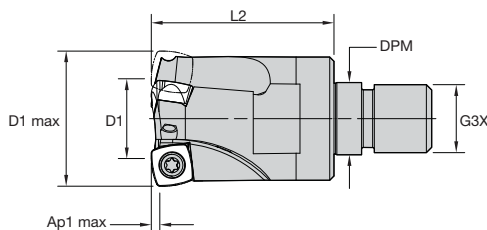
Material Group		KCSM40			SC6525			SP6519			X400			X500		
P	1	-	-	-	445	305	170	285	210	125	250	185	115	260	190	125
	2	-	-	-	390	270	145	250	185	110	220	165	100	230	170	110
	3	-	-	-	350	240	125	220	160	95	190	145	90	200	150	95
	4	-	-	-	250	175	95	170	120	70	145	105	70	150	115	70
	5	165	140	115	190	145	95	135	100	70	-	-	-	125	95	70
	6	145	105	75	170	120	70	115	80	50	-	-	-	105	75	50
M	1	200	165	135	240	215	170	260	190	110	-	-	-	240	175	110
	2	170	140	115	230	190	145	225	165	100	-	-	-	210	150	95
	3	140	105	80	175	155	110	190	135	80	-	-	-	170	125	75
K	1	-	-	-	470	325	175	285	210	135	-	-	-	250	210	165
	2	-	-	-	365	250	140	230	170	105	-	-	-	210	170	125
	3	-	-	-	-	-	-	210	150	95	-	-	-	165	135	95
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	40	30	25	-	-	-	50	40	25	-	-	-	50	30	25
	2	40	30	25	-	-	-	50	30	20	-	-	-	45	30	20
	3	50	40	25	-	-	-	50	40	25	-	-	-	50	40	25
	4	55	50	30	-	-	-	75	55	35	-	-	-	70	50	30
H	1	-	-	-	-	-	-	-	-	-	90	70	45	-	-	-
	2	-	-	-	-	-	-	-	-	-	75	55	30	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

 Dry
 Wet



- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.
- Screw-on cutters provide better rigidity and stability when used with small spindels: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



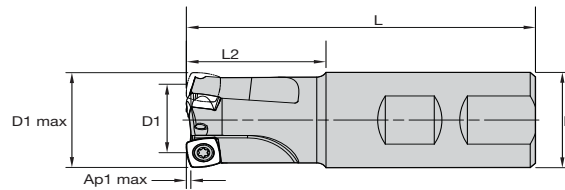
■ 7792VXD09 Modular Head • Screw-On

order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5667916	7792VXD09SA025Z2R35	25	12	35	M12	12,50	1,50	2
6024361	7792VXD09SA025Z3R35	25	12	35	M12	12,50	1,50	3
5660448	7792VXD09SA032Z3R43	32	19	43	M16	17,00	1,50	3
6024362	7792VXD09SA032Z4R43	32	19	43	M16	17,00	1,50	4
5673503	7792VXD09SA035Z3R43	35	22	43	M16	17,00	1,50	3
6024363	7792VXD09SA035Z4R43	35	22	43	M16	17,00	1,50	4
6024365	7792VXD09SA042Z5R43	42	29	43	M16	17,00	1,50	5

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD09SA025Z2R35	F3508T	2,1	T15
7792VXD09SA025Z3R35	F3508T	2,1	TB15
7792VXD09SA032Z3R43	F3510T	2,1	T15
7792VXD09SA032Z4R43	F3508T	2,1	T15
7792VXD09SA035Z3R43	F3510T	2,1	T15
7792VXD09SA035Z4R43	F3510T	2,1	T15
7792VXD09SA042Z5R43	F3510T	2,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



■ 7792VXD09 Weldon Shank

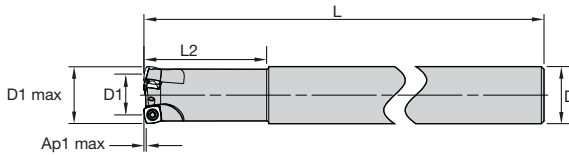
order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5658074	7792VXD09WA032Z3R	32	32	19	100	40	1,50	3

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD09WA032Z3R	F3510T	2,1	T15



- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



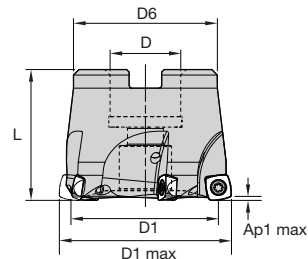
7792VXD09 Cylindrical Shank

order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5659947	7792VXD09CA025Z2R50	25	25	12	200	50	1,50	2
6024366	7792VXD09CA025Z3R50	25	25	12	200	50	1,50	3
5661016	7792VXD09CA032Z3R70	32	32	19	250	70	1,50	3
6024367	7792VXD09CA032Z4R70	32	32	19	250	70	1,50	4

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD09CA025Z2R50	F3508T	2,1	T15
7792VXD09CA025Z3R50	F3508T	2,1	TB15
7792VXD09CA032Z3R70	F3510T	2,1	T15
7792VXD09CA032Z4R70	F3510T	2,1	T15

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



■ 7792VXD09 Shell Mill

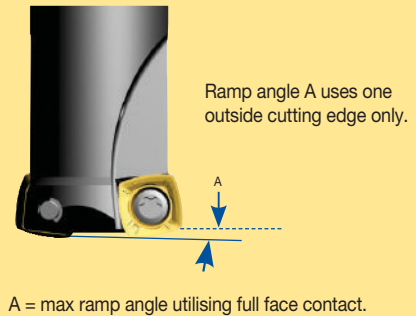
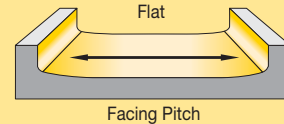
order number	catalogue number	D1 max	D	D1	D6	L	Ap1 max	Z U
5656727	7792VXD09-A040Z3R	40	16	27	36	32	1,50	3
5657234	7792VXD09-A040Z4R	40	16	27	36	32	1,50	4
5667475	7792VXD09-A040Z5R	40	16	27	36	32	1,50	5
5656914	7792VXD09-A050Z5R	50	22	37	46	40	1,50	5
5656377	7792VXD09-A050Z6R	50	22	37	46	40	1,50	6
6024368	7792VXD09-A050Z7R	50	22	37	45	40	1,50	7
6024369	7792VXD09-A052Z5R	52	22	39	45	40	1,50	5
6024370	7792VXD09-A052Z6R	52	22	39	45	40	1,50	6
6024371	7792VXD09-A052Z7R	52	22	39	45	40	1,50	7
6024372	7792VXD09-A063Z5R	63	22	50	42	40	1,50	5
6024373	7792VXD09-A063Z6R	63	22	50	42	40	1,50	6
6024374	7792VXD09-A063Z9R	63	22	50	45	40	1,50	9
6024375	7792VXD09-A066Z5R	66	27	53	55	50	1,50	5
6024376	7792VXD09-A066Z6R	66	27	53	55	50	1,50	6

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver	mounting screw
7792VXD09-A040Z3R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A040Z4R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A040Z5R	F3510T	2,1	T15	M8 1.25 X 25 SHCS
7792VXD09-A050Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A050Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A050Z7R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A052Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A052Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A052Z7R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A063Z5R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A063Z6R	F3510T	2,1	T15	M10 1.5 X 25 SHCS
7792VXD09-A063Z9R	F3510T	2,1	TB15	M10 1.5 X 25 SHCS
7792VXD09-A066Z5R	F3510T	2,1	T15	M12 X 1.75 X 30 SHCS
7792VXD09-A066Z6R	F3510T	2,1	T15	M12 X 1.75 X 30 SHCS

■ Technical Information (mm)

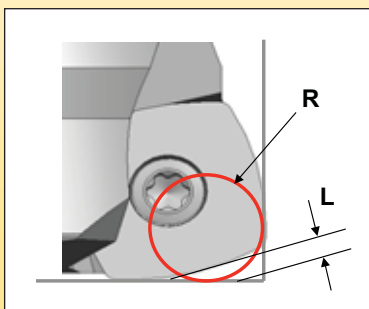
order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole min-max		ap max helical/linear	a _e max plunging	
5658074	7792VXD09WA032Z3R	18,75	1,5	48	62	1,00	6,00	40500
5659947	7792VXD09CA025Z2R50	11,75	2,8	34	48	1,00	6,00	48500
6024366	7792VXD09CA025Z3R50	11,75	2,8	34	48	1,00	6,00	48500
5661016	7792VXD09CA032Z3R70	18,75	1,5	48	62	1,00	6,00	40500
6024367	7792VXD09CA032Z4R70	18,75	1,5	48	62	1,00	6,00	40500
5656727	7792VXD09-A040Z3R	26,75	0,8	64	78	1,00	6,00	34500
5657234	7792VXD09-A040Z4R	26,75	0,8	64	78	1,00	6,00	34500
5667475	7792VXD09-A040Z5R	26,75	0,8	64	78	1,00	6,00	34500
5656914	7792VXD09-A050Z5R	36,75	0,7	84	98	1,00	6,00	30000
5656377	7792VXD09-A050Z6R	36,75	0,7	84	98	1,00	6,00	29500
6024368	7792VXD09-A050Z7R	36,75	0,7	84	98	1,00	6,00	30000
6024369	7792VXD09-A052Z5R	38,75	0,7	88	102	1,00	6,00	29500
6024370	7792VXD09-A052Z6R	38,75	0,7	88	102	1,00	6,00	29500
6024371	7792VXD09-A052Z7R	38,75	0,7	88	102	1,00	6,00	29500
6024372	7792VXD09-A063Z5R	49,75	0,5	88	102	1,00	6,00	26000
6024373	7792VXD09-A063Z6R	49,75	0,5	88	102	1,00	6,00	26000
6024374	7792VXD09-A063Z8R	49,75	0,5	88	102	1,00	6,00	26000
6024375	7792VXD09-A066Z5R	52,75	0,5	116	130	1,00	6,00	25500
6024376	7792VXD09-A066Z6R	52,75	0,5	116	130	1,00	6,00	25500
5667916	7792VXD09SA025Z2R35	11,75	2,8	34	48	1,00	6,00	48500
6024361	7792VXD09SA025Z3R35	11,75	2,8	34	48	1,00	6,00	48500
5660448	7792VXD09SA032Z3R43	18,75	1,5	48	62	1,00	6,00	40500
6024362	7792VXD09SA032Z4R43	18,75	1,5	48	62	1,00	6,00	40500
5673503	7792VXD09SA035Z3R43	21,75	1,3	54	68	1,00	6,00	37500
6024363	7792VXD09SA035Z4R43	21,75	1,3	54	68	1,00	6,00	37500
6024365	7792VXD09SA042Z5R43	28,75	1,0	68	82	1,00	6,00	34000



■ CNC Program - Corner Radius Definition

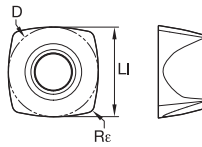
The use of common CAD / CAM systems requires a round insert dimension to be known for cavity machining. This is available with 7792VX cutters as shown to the right and in the reference table.

For finish pass applications:
Wiper Facet for finishing use max. feed 0,80mm/Revolution



Programming Data (mm)			
Insert size (IC)	radius	R	L
06	0,80	1,37	0,40
09	0,80	2,01	0,73
	1,20	2,27	0,67
12	0,80	2,50	1,02
	1,20	2,73	0,97

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2					◇/◆		◇◇	◆◆					
P3-P4		◇/◆	◇	◇			◇◇	◆◆					
P5-P6		◇/◆		◇			◇	◆◆	◇◇	◇/◆			
M1-M2					◆◆			◇◇					◆
M3					◆			◆					◆◆
K1-K2							◇◇	◆	◆◆				
K3		◇/◆	◇				◇◇	◆	◆◆				
N1	◆◆												
N2	◆◆												
S1								◆		◆			◆◆
S2								◆		◆			◆◆
S3								◆◆		◆			◆
S4								◆◆		◆			◆



ISO catalogue number	D	LI	Re	GH2	KC522M	KCPK30	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining													
XDPT090412ERD411	9,53	9,53	1,2	-	-	-	-	6185922	-	-	-	-	-



General Machining													
XDLT090408ERD41	9,53	9,53	0,8	-	-	-	-	-	-	5653106	5652490	-	5654896
XDLT090408ERD721	9,53	9,53	0,8	5655472	-	-	-	-	-	-	-	-	-
XDPT090408ERD41	9,53	9,53	0,8	-	-	-	-	6185921	-	6010771	6010730	-	6010729
XDLT090412ERD411	9,53	9,53	1,2	-	-	-	-	-	-	-	5652249	-	5655172
XDPT090412SRGP	9,53	9,53	1,2	-	6191645	6191643	6191642	-	-	-	-	-	-



Heavy Machining													
XDLW090408SRD	9,53	9,53	0,8	-	-	-	-	-	5656081	5655255	-	5652239	5651222
XDPT090412SRD	9,52	9,52	1,2	-	6187538	-	6187535	-	-	-	-	-	-

XDL...: Ground inserts; high versatility for machining soft materials and difficult-to-machine stainless steels and high-temp alloys.
 XDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- E..D721: First choice for non-ferrous alloys.
- E.D41: General purpose in soft steels. Best fit for face milling and slotting operations.
- E.D411: General purpose in stainless steel and high-temp alloys. Best fit for pocketing and profiling operations in general, also in combination with long overhangs.
- S..D: First choice for roughing alloyed steel and cast iron.
- S.GP: General use on alloyed steels. Good balance across all machining situations.



■ Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining
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At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,30	0,96	1,69	0,22	0,68	1,18	0,16	0,51	0,87	0,14	0,44	0,75	0,13	0,40	0,69	.E..D721
.E..D41	0,38	1,10	1,69	0,27	0,78	1,18	0,20	0,58	0,87	0,18	0,50	0,75	0,16	0,46	0,69	.E..D41
.E..D411	0,38	1,10	1,69	0,27	0,78	1,18	0,20	0,58	0,87	0,18	0,50	0,75	0,16	0,46	0,69	.E..D411
.S..D	0,55	1,21	1,99	0,39	0,86	1,38	0,29	0,63	1,01	0,25	0,55	0,88	0,23	0,50	0,80	.S..D
.S..GP	0,55	1,22	2,01	0,39	0,86	1,39	0,29	0,64	1,02	0,25	0,55	0,89	0,23	0,51	0,81	.S..GP

At 1,10 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,35	1,12	1,98	0,25	0,79	1,37	0,19	0,59	1,01	0,16	0,51	0,87	0,15	0,47	0,80	.E..D721
.E..D41	0,44	1,28	1,98	0,32	0,90	1,37	0,24	0,67	1,01	0,21	0,58	0,87	0,19	0,53	0,80	.E..D41
.E..D411	0,44	1,28	1,98	0,32	0,90	1,37	0,24	0,67	1,01	0,21	0,58	0,87	0,19	0,53	0,80	.E..D411
.S..D	0,64	1,42	2,35	0,45	1,00	1,61	0,34	0,74	1,18	0,30	0,64	1,02	0,27	0,59	0,93	.S..D
.S..GP	0,64	1,42	2,37	0,45	1,00	1,63	0,34	0,74	1,19	0,30	0,64	1,03	0,27	0,59	0,94	.S..GP

At 0,90 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,39	1,24	2,20	0,28	0,88	1,52	0,21	0,65	1,11	0,18	0,56	0,96	0,17	0,52	0,88	.E..D721
.E..D41	0,48	1,42	2,20	0,35	1,00	1,52	0,26	0,74	1,11	0,23	0,64	0,96	0,21	0,59	0,88	.E..D41
.E..D411	0,48	1,42	2,20	0,35	1,00	1,52	0,26	0,74	1,11	0,23	0,64	0,96	0,21	0,59	0,88	.E..D411
.S..D	0,70	1,57	2,61	0,50	1,10	1,78	0,37	0,81	1,30	0,33	0,71	1,12	0,30	0,64	1,03	.S..D
.S..GP	0,70	1,58	2,65	0,50	1,11	1,80	0,37	0,82	1,31	0,33	0,71	1,14	0,30	0,65	1,04	.S..GP

■ Feed Rate Guide • Plunging • IC 09 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz)			Insert Geometry
	Max 6mm insert engagement (ae radial engagement)			
.E..D721	0,06		0,18	.E..D721
.E..D41	0,07		0,20	.E..D41
.E..D411	0,07		0,20	.E..D411
.S..D	0,10		0,22	.S..D
.S..GP	0,10		0,22	.S..GP

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	395	340	325	545	475	445	355	310	295	275	240	205
	2	-	-	-	330	290	240	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	260	210	305	275	245	275	235	190	205	180	160
	4	-	-	-	270	220	180	230	210	190	245	205	160	180	160	145
	5	-	-	-	220	205	180	310	275	250	205	185	160	160	145	125
	6	-	-	-	200	150	120	190	160	-	180	140	110	125	110	90
M	1	-	-	-	245	215	200	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	155	220	190	170	210	180	150	180	145	125
	3	-	-	-	170	145	115	175	155	140	155	140	110	145	125	110
K	1	300	220	145	275	245	220	355	320	290	-	-	-	-	-	-
	2	260	190	125	215	190	180	280	250	230	-	-	-	-	-	-
	3	220	175	120	180	160	145	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	145	110	85	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	-	-	-	445	305	170	355	260	155	310	230	145	325	240	155
	2	-	-	-	390	270	145	310	230	140	275	205	125	290	215	140
	3	-	-	-	350	240	125	275	200	120	240	180	115	250	185	120
	4	-	-	-	250	175	95	210	150	90	180	130	85	190	145	90
	5	-	-	-	190	145	95	170	125	85	-	-	-	155	120	85
	6	-	-	-	170	120	70	145	100	60	-	-	-	130	95	60
M	1	-	-	-	240	215	170	325	235	140	-	-	-	300	220	140
	2	-	-	-	230	190	145	280	205	125	-	-	-	265	190	120
	3	-	-	-	175	155	110	235	170	100	-	-	-	215	155	95
K	1	475	330	180	470	325	175	355	265	170	-	-	-	310	265	205
	2	400	275	145	365	250	140	290	210	130	-	-	-	265	215	155
	3	330	230	125	-	-	-	265	190	120	-	-	-	205	170	120
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	115	85	55	-	-	-
	2	-	-	-	-	-	-	-	-	-	95	70	40	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet



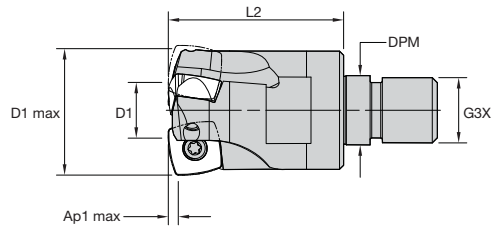
Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	315	270	260	435	380	355	285	250	235	-	-	-
	2	-	-	-	265	230	190	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	210	170	245	220	195	220	190	150	-	-	-
	4	-	-	-	215	175	145	185	170	150	195	165	130	-	-	-
	5	-	-	-	175	165	145	250	220	200	165	150	130	165	140	115
	6	-	-	-	160	120	95	150	130	-	145	110	90	145	105	75
M	1	-	-	-	195	170	160	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	125	175	150	135	170	145	120	170	140	115
	3	-	-	-	135	115	90	140	125	110	125	110	90	140	105	80
K	1	240	175	115	220	195	175	285	255	230	-	-	-	-	-	-
	2	210	150	100	170	150	145	225	200	185	-	-	-	-	-	-
	3	175	140	95	145	130	115	190	170	150	-	-	-	-	-	-
N	1	1150	910	385	-	-	-	-	-	-	-	-	-	-	-	-
	2	1150	910	385	-	-	-	-	-	-	-	-	-	-	-	-
	3	850	700	285	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	40	30	25	-	-	-	40	30	30	40	30	25
	2	-	-	-	40	30	25	-	-	-	40	30	30	40	30	25
	3	-	-	-	50	40	25	-	-	-	50	40	30	50	40	25
	4	-	-	-	70	50	30	65	50	30	65	50	30	55	50	30
H	1	-	-	-	115	90	70	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	355	245	135	445	305	170	285	210	125	250	185	115	260	190	125
	2	310	215	115	390	270	145	250	185	110	220	165	100	230	170	110
	3	280	190	100	350	240	125	220	160	95	190	145	90	200	150	95
	4	200	140	75	250	175	95	170	120	70	145	105	70	150	115	70
	5	150	115	75	190	145	95	135	100	70	-	-	-	125	95	70
	6	135	95	55	170	120	70	115	80	50	-	-	-	105	75	50
M	1	190	170	135	240	215	170	260	190	110	-	-	-	240	175	110
	2	185	150	115	230	190	145	225	165	100	-	-	-	210	150	95
	3	140	125	90	175	155	110	190	135	80	-	-	-	170	125	75
K	1	375	260	140	470	325	175	285	210	135	-	-	-	250	210	165
	2	290	200	110	365	250	140	230	170	105	-	-	-	210	170	125
	3	-	-	-	-	-	-	210	150	95	-	-	-	165	135	95
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	50	40	25	-	-	-	50	30	25
	2	-	-	-	-	-	-	50	30	20	-	-	-	45	30	20
	3	-	-	-	-	-	-	50	40	25	-	-	-	50	40	25
	4	-	-	-	-	-	-	75	55	35	-	-	-	70	50	30
H	1	-	-	-	-	-	-	-	-	-	90	70	45	-	-	-
	2	-	-	-	-	-	-	-	-	-	75	55	30	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in bold type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.
- Screw-on cutters provide better rigidity and stability when used with small spindles: BT30, BT40, DV40, HSK50, HSK63, etc.
- Screw-on cutters can be less expensive when compared to cylindrical shank cutters due to their higher flexibility through multiple holder combinations.



■ 7792VXD12 Modular Head • Screw-On

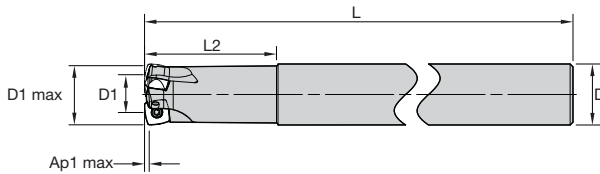
order number	catalogue number	D1 max	D1	L2	G3X	DPM	Ap1 max	Z U
5659132	7792VXD12SA032Z2R43	32	11	43	M16	17,00	2,50	2
6025280	7792VXD12SA032Z3R43	32	14	43	M16	17,00	2,50	3
6025561	7792VXD12SA035Z3R43	35	17	43	M16	17,00	2,50	3
6025562	7792VXD12SA042Z4R43	42	24	43	M16	17,00	2,50	4

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD12SA032Z2R43	D4010T	3,1	T15
7792VXD12SA032Z3R43	D4010T	3,1	T15
7792VXD12SA035Z3R43	D4010T	3,1	T15
7792VXD12SA042Z4R43	D4010T	3,1	T15



- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.



7792VXD12 Cylindrical Shank

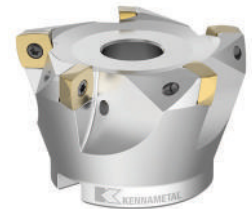
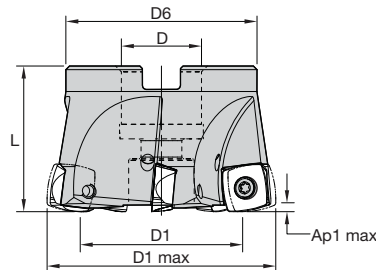
order number	catalogue number	D1 max	D	D1	L	L2	Ap1 max	Z U
5661017	7792VXD12CA032Z2R70	32	32	11	250	70	2,50	2
6025563	7792VXD12CA032Z3R70	32	32	14	250	70	2,50	3

Spare Parts

catalogue number	insert screw	Nm	Torx driver
7792VXD12CA032Z2R70	D4010T	3,1	T15
7792VXD12CA032Z3R70	D4010T	3,1	T15

TURNING
 FIRST CHOICE
 MILLING
 FIRST CHOICE
 HOLEMAKING
 FIRST CHOICE
 TOOLING SYSTEMS
 FIRST CHOICE

- Ultra-fine pitch cutters available to increase material removal rates, especially on high-temp alloys.
- Positive design to support lower cutting forces and long overhang usage.
- Ramping and plunge milling capabilities.


7792VXD12 Shell Mill • Coarse, Medium, and Fine Pitch

order number	catalogue number	D1 max	D	D1	D6	L	Ap1 max	Z U
6025272	7792VXD12-A040Z4R	40	22	22	38	40	2,50	4
5673504	7792VXD12-A050Z4R	50	22	32	48	40	2,50	4
6025273	7792VXD12-A050Z6R	50	22	32	45	40	2,50	6
5656728	7792VXD12-A052Z3R	52	22	34	48	40	2,50	3
5666187	7792VXD12-A052Z4R	52	22	34	48	40	2,50	4
5656383	7792VXD12-A052Z5R	52	22	34	48	40	2,50	5
6025274	7792VXD12-A052Z6R	52	22	34	45	40	2,50	6
5656729	7792VXD12-A063Z4R	63	22	45	53	40	2,50	4
5657235	7792VXD12-A063Z5R	63	22	45	53	40	2,50	5
6025275	7792VXD12-A063Z7R	63	22	45	45	40	2,50	7
5660065	7792VXD12-A066Z5R	66	27	48	58	45	2,50	5
6025276	7792VXD12-A066Z7R	66	27	48	50	45	2,50	7
5656730	7792VXD12-A080Z5R	80	27	62	55	50	2,50	5
5667478	7792VXD12-A080Z8R	80	27	62	55	50	2,50	8
6025277	7792VXD12-A080Z10R	80	27	62	55	50	2,50	10
5667834	7792VXD12-A100Z6R	100	32	82	82	50	2,50	6
5666144	7792VXD12-A100Z9R	100	32	82	82	50	2,50	9
6025278	7792VXD12-A100Z11R	100	32	82	68	50	2,50	11
5656380	7792VXD12-A125Z8R	125	40	107	82	63	2,50	8
5665943	7792VXD12-A125Z11R	125	40	107	82	63	2,50	11
5659130	7792VXD12-160Z7R	160	40	142	110	63	2,50	7






NOTE: No through coolant for cutters where D1 max = 160mm.

(continued)



(continued)

■ Spare Parts

catalogue number	 insert screw	 Nm	 Torx driver	 mounting screw	 mounting screw
7792VXD12-A040Z4R	D4010T	3,1	T15	—	KLSSM22-39-CG
7792VXD12-A050Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A050Z6R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	—
7792VXD12-A052Z3R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A052Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A052Z5R	D4010T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A052Z6R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	—
7792VXD12-A063Z4R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A063Z5R	D4012T	3,1	T15	M10 1.5 X 25 SHCS	—
7792VXD12-A063Z7R	D4010T	3,1	TB15	M10 1.5 X 25 SHCS	—
7792VXD12-A066Z5R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	—
7792VXD12-A066Z7R	D4010T	3,1	TB15	M12 X 1.75 X 30 SHCS	—
7792VXD12-A080Z5R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	—
7792VXD12-A080Z8R	D4012T	3,1	T15	M12 X 1.75 X 30 SHCS	—
7792VXD12-A080Z10R	D4010T	3,1	TB15	M12 X 1.75 X 30 SHCS	—
7792VXD12-A100Z6R	D4012T	3,1	T15	M16 X 2 X 40 SHCS	—
7792VXD12-A100Z9R	D4012T	3,1	T15	M16 X 2 X 40 SHCS	—
7792VXD12-A100Z11R	D4010T	3,1	TB15	M16 X 2 X 40 SHCS	—
7792VXD12-A125Z8R	D4012T	3,1	T15	M20 X 2.5 X 50 SHCS	—
7792VXD12-A125Z11R	D4012T	3,1	T15	M20 X 2.5 X 50 SHCS	—
7792VXD12-160Z7R	D4012T	3,1	T15	—	—

TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

■ Technical Information (mm)

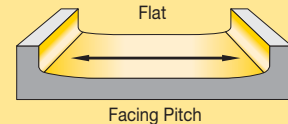
order number	catalogue number	dimension						max RPM
		facing pitch	ramping angle	helical hole		ap max helical/linear	a _e max plunging	
				min-max				
5661017	7792VXD12CA032Z2R70	10,60	1,8	42	62	1,80	9,00	31500
6025563	7792VXD12CA032Z3R70	10,6	1,8	42	62	1,80	9,00	31500
6025272	7792VXD12-A040Z4R	21,6	1,4	58	78	1,80	9,00	26500
5673504	7792VXD12-A050Z4R	31,6	0,9	78	98	1,80	9,00	22500
6025273	7792VXD12-A050Z6R	31,6	0,9	78	98	1,80	9,00	22500
5656728	7792VXD12-A052Z3R	33,60	0,8	82	102	1,80	9,00	22000
5666187	7792VXD12-A052Z4R	33,60	0,8	82	102	1,80	9,00	22000
5656383	7792VXD12-A052Z5R	33,60	0,8	82	102	1,80	9,00	22000
6025274	7792VXD12-A052Z6R	33,6	0,8	82	102	1,80	9,00	22000
5656729	7792VXD12-A063Z4R	44,60	0,6	104	124	1,80	9,00	19500
5657235	7792VXD12-A063Z5R	44,60	0,6	104	124	1,80	9,00	19500
6025275	7792VXD12-A063Z7R	44,6	0,6	104	124	1,80	9,00	19500
5660065	7792VXD12-A066Z5R	47,60	0,5	110	130	1,80	9,00	19000
6025276	7792VXD12-A066Z7R	47,6	0,5	110	130	1,80	9,00	19000
5656730	7792VXD12-A080Z5R	61,60	0,5	138	158	1,80	9,00	17000
5667478	7792VXD12-A080Z8R	61,60	0,5	138	158	1,80	9,00	17000
6025277	7792VXD12-A080Z10R	61,6	0,5	138	158	1,80	9,00	17000
5667834	7792VXD12-A100Z6R	81,60	0,3	178	198	1,80	9,00	15000
5666144	7792VXD12-A100Z9R	81,60	0,3	178	198	1,80	9,00	15000
6025278	7792VXD12-A100Z11R	81,6	0,3	178	198	1,80	9,00	15000
5656380	7792VXD12-A125Z8R	106,60	0,2	228	248	1,80	9,00	13000
5665943	7792VXD12-A125Z11R	106,60	0,2	228	248	1,80	9,00	13000
5659130	7792VXD12-160Z7R	141,6	0,2	298	318	1,80	9,00	11500
5659132	7792VXD12SA032Z2R43	10,60	1,8	42	62	1,80	9,00	31500
6025280	7792VXD12SA032Z3R43	10,6	1,8	42	62	1,80	9,0	31500
6025561	7792VXD12SA035Z3R43	16,6	1,8	48	68	1,80	9,0	29000
6025562	7792VXD12SA042Z4R43	23,6	1,3	62	82	1,80	9,0	25500



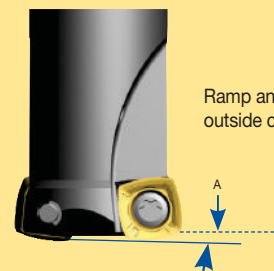
Helical Interpolation



Plunging



Facing Pitch



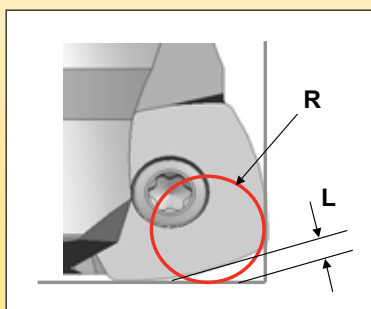
Ramp angle A uses one outside cutting edge only.

A = max ramp angle utilising full face contact.

■ CNC Programme • Corner Radius Definition

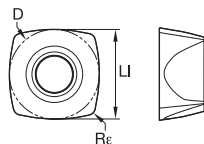
The use of common CAD/CAM systems requires a round insert dimension to be known for cavity machining. This is available with 7792VX cutters as shown below and in the reference table.

For finish pass applications:
Wiper Facet for finishing use max feed 0,5 mm/z



Programming Data (mm)			
Insert corner nose size (IC)	R _ε	R	L
06	0,80	1,37	0,40
09	0,80	2,01	0,73
	1,20	2,27	0,67
12	0,80	2,50	1,02
	1,20	2,73	0,97

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2					◇/◆		◇◇	◆◆					
P3-P4		◇/◆	◇	◇			◇◇	◆◆					
P5-P6		◇/◆		◇			◇	◆◆	◇◇	◇/◆			
M1-M2					◆◆			◇◇				◆	
M3					◆			◆				◆◆	
K1-K2							◇◇	◆	◆◆				
K3		◇/◆	◇				◇◇	◆	◆◆				
N1	◆◆												
N2	◆◆												
S1							◆		◆			◆◆	
S2							◆		◆			◆◆	
S3							◆◆		◆			◆	
S4							◆◆		◆			◆	

ISO catalogue number	D	LI	Re	GH2	KC522M	KCPK30	KCPM40	KCSM40	SC3025	SC6525	SP6519	X400	X500
Light Machining													
XDPT120512ERD411	12,70	12,70	1,2	-	-	-	-	6187808	-	-	-	-	-

General Machining													
XDLT120508ERD41	12,70	12,70	0,8	-	-	-	-	6441067	-	5652729	5654220	-	5653930
XDLT120508ERD721	12,70	12,70	0,8	5656252	-	-	-	-	-	-	-	-	-
XDPT120508ERD41	12,70	12,70	0,8	-	-	-	-	6187806	-	6010774	6010773	-	6010772
XDLT120512ERD411	12,70	12,70	1,2	-	-	-	-	6441068	-	-	5652899	-	5652248
XDPT120515SRGP	12,70	12,70	1,5	-	6074030	6074028	6074027	-	-	-	-	-	-

Heavy Machining													
XDLW120508SRD	12,70	12,70	0,8	-	-	-	-	-	5656214	-	-	5651223	5655109
XDPW120515SRD	12,70	12,70	1,5	-	6033256	6033255	6033254	-	-	-	-	-	-

XDL...: Ground inserts; high versatility for machining soft materials and difficult-to-machine stainless steels and high-temp alloys.
 XDP...: Pressed; lower cost per edge for most roughing to semi-finishing operations.

- .E..D721: First choice for non-ferrous alloys.
- .E.D41: General purpose in soft steels. Best fit for face milling and slotting operations.
- .E.D411: General purpose in stainless steel and high-temp alloys. Best fit for pocketing and profiling operations in general, also in combination with long overhangs.
- .S..D: First choice for roughing alloyed steel and cast iron.
- .S.GP: General use on alloyed steels. Good balance across all machining situations.

Recommended Starting Feeds [mm] • High-Feed

Light Machining	General Purpose	Heavy Machining
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At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,28	1,02	1,65	0,21	0,73	1,18	0,15	0,55	0,88	0,13	0,48	0,76	0,12	0,44	0,70	.E..D721
.E..D41	0,36	1,15	1,81	0,26	0,83	1,29	0,19	0,62	0,96	0,17	0,54	0,83	0,15	0,49	0,76	.E..D41
.E..D411	0,36	1,15	1,81	0,26	0,83	1,29	0,19	0,62	0,96	0,17	0,54	0,83	0,15	0,49	0,76	.E..D411
.S..GP	0,51	1,30	1,99	0,37	0,93	1,41	0,28	0,70	1,05	0,24	0,61	0,91	0,22	0,55	0,83	.S..GP
.S..D	0,51	1,30	1,95	0,37	0,93	1,38	0,28	0,70	1,03	0,24	0,61	0,89	0,22	0,55	0,82	.S..D

At 1,70 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,34	1,23	2,00	0,25	0,88	1,42	0,19	0,66	1,05	0,16	0,57	0,92	0,15	0,52	0,84	.E..D721
.E..D41	0,43	1,39	2,20	0,31	0,99	1,56	0,23	0,74	1,15	0,20	0,64	1,00	0,19	0,59	0,92	.E..D41
.E..D411	0,43	1,39	2,20	0,31	0,99	1,56	0,23	0,74	1,15	0,20	0,64	1,00	0,19	0,59	0,92	.E..D411
.S..GP	0,62	1,57	2,41	0,45	1,12	1,70	0,33	0,84	1,26	0,29	0,73	1,10	0,27	0,67	1,00	.S..GP
.S..D	0,62	1,57	2,36	0,45	1,12	1,67	0,33	0,84	1,24	0,29	0,73	1,08	0,27	0,67	0,98	.S..D

At 1,30 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)														Insert Geometry	
	5%			10%			20%			30%			40-100%			
.E..D721	0,39	1,41	2,29	0,28	1,01	1,62	0,21	0,75	1,20	0,18	0,65	1,04	0,17	0,60	0,96	.E..D721
.E..D41	0,49	1,59	2,52	0,35	1,13	1,78	0,26	0,84	1,31	0,23	0,73	1,14	0,21	0,67	1,04	.E..D41
.E..D411	0,49	1,59	2,52	0,35	1,13	1,78	0,26	0,84	1,31	0,23	0,73	1,14	0,21	0,67	1,04	.E..D411
.S..GP	0,70	1,80	2,76	0,51	1,28	1,94	0,38	0,95	1,44	0,33	0,83	1,25	0,30	0,76	1,14	.S..GP
.S..D	0,70	1,80	2,71	0,51	1,28	1,90	0,38	0,95	1,41	0,33	0,83	1,22	0,30	0,76	1,12	.S..D

Feed Rate Guide • Plunging • IC 12 • fz [mm/tooth]

Insert Geometry	Programmed Feed per Tooth (fz)			Insert Geometry
	Max 9mm insert engagement (ae radial engagement)			
.E..D721	0,06	0,20	0,32	.E..D721
.E..D41	0,07	0,23	0,35	.E..D41
.E..D411	0,07	0,23	0,35	.E..D411
.S..GP	0,10	0,25	0,38	.S..GP
.S..D	0,10	0,25	0,38	.S..D



Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	395	340	325	545	475	445	355	310	295	275	240	205
	2	-	-	-	330	290	240	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	260	210	305	275	245	275	235	190	205	180	160
	4	-	-	-	270	220	180	230	210	190	245	205	160	180	160	145
	5	-	-	-	220	205	180	310	275	250	205	185	160	160	145	125
	6	-	-	-	200	150	120	190	160	145	180	140	110	125	110	90
M	1	-	-	-	245	215	200	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	155	220	190	170	210	180	150	180	145	125
	3	-	-	-	170	145	115	175	155	140	155	140	110	145	125	110
K	1	300	220	145	275	245	220	355	320	290	-	-	-	-	-	-
	2	260	190	125	215	190	180	280	250	230	-	-	-	-	-	-
	3	220	175	120	180	160	145	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	145	110	85	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	-	-	-	445	305	170	355	260	155	310	230	145	325	240	155
	2	-	-	-	390	270	145	310	230	140	275	205	125	290	215	140
	3	-	-	-	350	240	125	275	200	120	240	180	115	250	185	120
	4	-	-	-	250	175	95	210	150	90	180	130	85	190	145	90
	5	-	-	-	190	145	95	170	125	85	-	-	-	155	120	85
	6	-	-	-	170	120	70	145	100	60	-	-	-	130	95	60
M	1	-	-	-	240	215	170	325	235	140	-	-	-	300	220	140
	2	-	-	-	230	190	145	280	205	125	-	-	-	265	190	120
	3	-	-	-	175	155	110	235	170	100	-	-	-	215	155	95
K	1	475	330	180	470	325	175	355	265	170	-	-	-	310	265	205
	2	400	275	145	365	250	140	290	210	130	-	-	-	265	215	155
	3	330	230	125	-	-	-	265	190	120	-	-	-	205	170	120
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	115	85	55	-	-	-
	2	-	-	-	-	-	-	-	-	-	95	70	40	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

Material Group		GH2			KC522M			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	315	270	260	435	380	355	285	250	235	-	-	-
	2	-	-	-	265	230	190	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	210	170	245	220	195	220	190	150	-	-	-
	4	-	-	-	215	175	145	185	170	150	195	165	130	-	-	-
	5	-	-	-	175	165	145	250	220	200	165	150	130	165	140	115
	6	-	-	-	160	120	95	150	130	120	145	110	90	145	105	75
M	1	-	-	-	195	170	160	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	125	175	150	135	170	145	120	170	140	115
	3	-	-	-	135	115	90	140	125	110	125	110	90	140	105	80
K	1	240	175	115	220	195	175	285	255	230	-	-	-	-	-	-
	2	210	150	100	170	150	145	225	200	185	-	-	-	-	-	-
	3	175	140	95	145	130	115	190	170	150	-	-	-	-	-	-
N	1	1150	910	385	-	-	-	-	-	-	-	-	-	-	-	-
	2	1150	910	385	-	-	-	-	-	-	-	-	-	-	-	-
	3	850	700	285	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	40	30	25	-	-	-	40	30	30	40	30	25
	2	-	-	-	40	30	25	-	-	-	40	30	30	40	30	25
	3	-	-	-	50	40	25	-	-	-	50	40	30	50	40	25
	4	-	-	-	70	50	30	65	50	30	65	50	30	55	50	30
H	1	-	-	-	115	90	70	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		SC3025			SC6525			SP6519			X400			X500		
P	1	355	245	135	445	305	170	285	210	125	250	185	115	260	190	125
	2	310	215	115	390	270	145	250	185	110	220	165	100	230	170	110
	3	280	190	100	350	240	125	220	160	95	190	145	90	200	150	95
	4	200	140	75	250	175	95	170	120	70	145	105	70	150	115	70
	5	150	115	75	190	145	95	135	100	70	-	-	-	125	95	70
	6	135	95	55	170	120	70	115	80	50	-	-	-	105	75	50
M	1	190	170	135	240	215	170	260	190	110	-	-	-	240	175	110
	2	185	150	115	230	190	145	225	165	100	-	-	-	210	150	95
	3	140	125	90	175	155	110	190	135	80	-	-	-	170	125	75
K	1	375	260	140	470	325	175	285	210	135	-	-	-	250	210	165
	2	290	200	110	365	250	140	230	170	105	-	-	-	210	170	125
	3	-	-	-	-	-	-	210	150	95	-	-	-	165	135	95
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	50	40	25	-	-	-	50	30	25
	2	-	-	-	-	-	-	50	30	20	-	-	-	45	30	20
	3	-	-	-	-	-	-	50	40	25	-	-	-	50	40	25
	4	-	-	-	-	-	-	75	55	35	-	-	-	70	50	30
H	1	-	-	-	-	-	-	-	-	-	90	70	45	-	-	-
	2	-	-	-	-	-	-	-	-	-	75	55	30	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

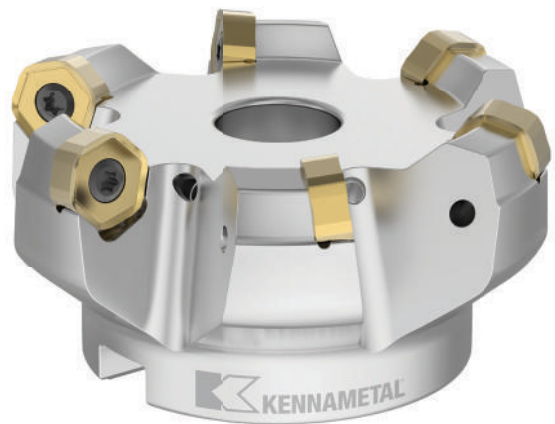
Dry
 Wet



➤ Dodeka™ 15° High-Feed

Primary Application

- Double-sided inserts with twelve cutting edges.
- Engineered to provide you with superior MRR and productivity through high feed rates for roughing operations.
- Equipped with standard Dodeka inserts.



Features and Benefits

Dodeka 15° Series — Most comprehensive high-feed milling platform. Provides excellent cost per cutting edge. Equipped with standard Dodeka inserts.

Dodeka Mini High-Feed 15° Dodeka High-Feed 15°

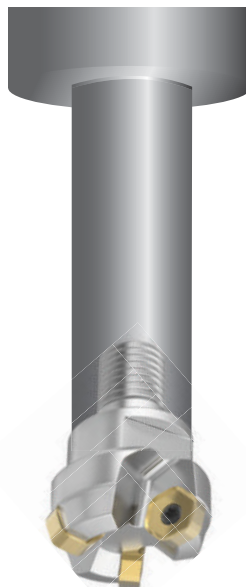


12 True
Cutting
Edges



Dodeka Mini Ap1 max = 1,6mm
Dodeka Ap1 max = 2,2mm

Dodeka Mini HF and Dodeka HF can be loaded with all Dodeka Mini standard inserts, except wiper inserts.



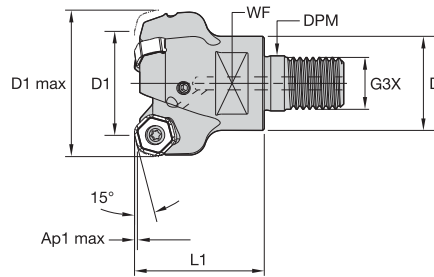
Dodeka Mini High-Feed

First choice for long reach face milling applications or light fixtures.

Chip thinning effect due to lead angle 14,5°. Tremendous enlargement of feed rate and metal removal rate (MRR).

Up to 40% shorter machining cycle time versus conventional milling.

- Twelve cutting edges per insert.
- High-feed capability.


■ Dodeka Mini High-Feed 15° • Screw-On End Mills

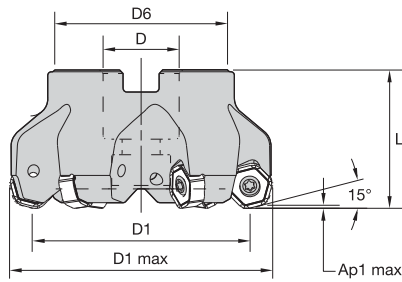
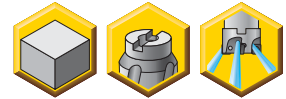
order number	catalogue number	D1	D1 max	D	DPM	G3X	L1	WF	Ap1 max	Z	kg	max RPM
4153687	KSHRHF025D03M16HN06	25	38,2	29	17,0	M16	32,0	22	1,6	3	0,16	20000

■ Spare Parts

D1	insert screw	Nm	wrench
25	193.492	3,5	170.025



- Twelve cutting edges per insert.
- High-feed capability.



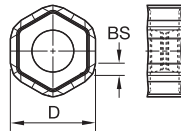
■ Dodeka Mini High-Feed 15° • Shell Mills

order number	catalogue number	D1	D1 max	D	D6	L	Ap1 max	Z	kg	max RPM
4153706	KSHRHF040A05RS15HN06	40	53,2	22	38	40	1,6	5	0,29	15800
4153707	KSHRHF050A05RS15HN06	50	63,1	22	38	40	1,6	5	0,39	12700
4153708	KSHRHF063A06RS15HN06	63	76,1	22	50	40	1,6	6	0,67	10100
4153709	KSHRHF080A08RS15HN06	80	93,1	27	60	50	1,6	8	1,26	7900

■ Spare Parts

D1	insert screw	Nm	wrench	socket-head cap screw
40	193.492	3,5	170.025	125.025
50	193.492	3,5	170.025	125.025
63	193.492	3,5	170.025	125.025
80	193.492	3,5	170.025	125.230

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2					◇/◆	◆◆		◇◇			
P3-P4					◇/◆	◆◆		◇	◇◇		
P5-P6					◇/◆	◆◆		◇	◇◇		
M1-M2					◇/◆	◆			◆		◆◆
M3					◇/◆	◆					◆◆
K1-K2		◇	◆◆					◇◇			
K3		◇	◆◆					◇◇			
N1	◆◆										
N2	◆◆										
S1						◆					◆◆
S2						◆					◆◆
S3					◆	◆					◆◆
S4					◆	◆					◆◆



ISO catalogue number	D	BS	KC410M	KC510M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining											
HNGJ0604ANENLD	12	1,54	-	4121576	-	4121578	-	4119227	4119190	5550701	6165862
HNGJ0604ANFNLDJ	12	1,54	4121575	-	-	-	-	-	-	-	-



General Machining											
HNPJ0604ANSNGD	12	1,45	-	-	4119696	4119697	4119701	4119699	4119700	5550703	6165759



Heavy Machining											
HNGJ0604ANSNHD	12	1,45	-	-	-	-	-	6039660	6039812	6039659	6165864
HNPJ0604ANSNHD	12	1,45	-	-	-	4119703	4119229	-	4119228	5550702	6165760
HNPJ060432ANSNHD	12	-	-	-	-	-	-	-	-	6068798	6165861

Recommended Starting Feeds

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40%-100%			
.F..LDJ	0,45	1,27	2,22	0,33	0,91	1,57	0,25	0,68	1,17	0,21	0,59	1,01	0,20	0,54	0,93	.F..LDJ
.E..LD	0,51	1,65	2,81	0,37	1,17	1,97	0,27	0,87	1,46	0,24	0,76	1,27	0,22	0,70	1,16	.E..LD
.S..GD	0,92	2,22	3,41	0,66	1,57	2,38	0,49	1,17	1,75	0,43	1,01	1,52	0,39	0,93	1,39	.S..GD
.S..HD	0,92	2,35	3,89	0,66	1,67	2,70	0,49	1,23	1,98	0,43	1,07	1,72	0,39	0,98	1,57	.S..HD

HNG....: Ground inserts; high versatility for all medium applications and difficult-to-machine stainless steels and high-temp alloys.
HNP....: Pressed inserts; lower cost per edge for roughing operations with high feed rates.



Material Group		KC410M*			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	395	340	325	310	275	260	
	2	-	-	-	-	-	-	-	-	330	290	240	265	230	190	
	3	-	-	-	-	-	-	-	-	305	260	210	240	205	170	
	4	-	-	-	295	240	205	-	-	270	220	180	215	180	145	
	5	-	-	-	-	-	-	-	-	220	205	180	180	160	145	
	6	-	-	-	-	-	-	-	-	200	150	120	155	120	95	
M	1	-	-	-	-	-	-	-	-	245	215	200	205	180	160	
	2	-	-	-	-	-	-	-	-	220	190	155	185	155	130	
	3	-	-	-	-	-	-	-	-	170	145	115	140	120	95	
K	1	-	-	-	355	320	290	325	295	260	275	245	220	-	-	
	2	-	-	-	275	245	230	250	230	210	215	190	180	-	-	
	3	-	-	-	235	210	190	210	190	175	180	160	145	-	-	
N	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
H	1	-	-	-	190	155	110	-	-	-	145	110	85	-	-	
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	545	475	445	355	310	295	275	240	205
	2	-	-	-	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	275	245	275	235	190	205	180	160
	4	-	-	-	230	210	190	245	205	160	180	160	145
	5	-	-	-	310	275	250	205	185	160	160	145	125
	6	-	-	-	190	160	145	180	140	110	125	110	90
M	1	-	-	-	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	170	210	180	150	180	145	125
	3	-	-	-	175	155	140	155	140	110	145	125	110
K	1	505	460	410	355	320	290	-	-	-	-	-	-
	2	400	355	330	280	250	230	-	-	-	-	-	-
	3	335	300	275	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in bold type.

As the average chip thickness increases, the speed should be decreased.

Dry

Wet

Material Group		KC410M			KC510M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	-	-	-	315	270	260	250	220	210
	2	-	-	-	-	-	-	-	-	-	265	230	190	210	185	150
	3	-	-	-	-	-	-	-	-	-	245	210	170	190	165	135
	4	-	-	-	235	190	165	-	-	-	215	175	145	170	145	115
	5	-	-	-	-	-	-	-	-	-	175	165	145	145	130	115
	6	-	-	-	-	-	-	-	-	-	160	120	95	125	95	75
M	1	-	-	-	-	-	-	-	-	-	195	170	160	165	145	130
	2	-	-	-	-	-	-	-	-	-	175	150	125	150	125	105
	3	-	-	-	-	-	-	-	-	-	135	115	90	110	95	75
K	1	-	-	-	285	255	230	260	235	210	220	195	175	-	-	-
	2	-	-	-	220	195	185	200	185	170	170	150	145	-	-	-
	3	-	-	-	190	170	150	170	150	140	145	130	115	-	-	-
N	1	1170	1035	955	615	550	505	-	-	-	-	-	-	-	-	-
	2	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
	3	1035	955	880	555	510	470	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	2	-	-	-	-	-	-	-	-	-	40	30	25	30	30	25
	3	-	-	-	-	-	-	-	-	-	50	40	25	45	30	25
	4	-	-	-	-	-	-	-	-	-	70	50	30	50	45	30
H	1	-	-	-	150	125	90	-	-	-	115	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

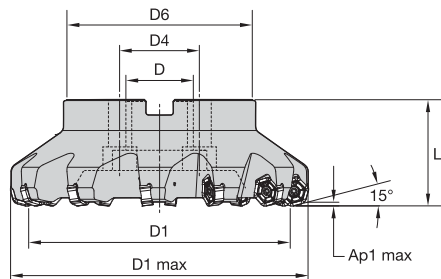
Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	435	380	355	285	250	235	-	-	-
	2	-	-	-	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	220	195	220	190	150	-	-	-
	4	-	-	-	185	170	150	195	165	130	-	-	-
	5	-	-	-	250	220	200	165	150	130	165	140	115
	6	-	-	-	150	130	120	145	110	90	145	105	75
M	1	-	-	-	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	135	170	145	120	170	140	115
	3	-	-	-	140	125	110	125	110	90	140	105	80
K	1	405	370	330	285	255	230	-	-	-	-	-	-
	2	320	285	265	225	200	185	-	-	-	-	-	-
	3	270	240	220	190	170	150	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	40	30	25
	2	-	-	-	-	-	-	40	30	30	40	30	25
	3	-	-	-	-	-	-	50	40	30	50	40	25
	4	-	-	-	65	50	30	65	50	30	55	50	30
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet



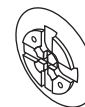
- High feed rates for rough face milling.
- 2mm depth-of-cut capability.
- Twelve cutting edges per insert.



■ Dodeka High-Feed 15° • Shell Mills

order number	catalogue number	D1	D1 max	D	D4	D6	L	Ap1 max	Z	kg	max RPM
4042533	KSHRHF63A05RS15HN09	63	80,9	22	—	50	40	2,2	5	0,65	8950
4042534	KSHRHF80A06RS15HN09	80	97,9	27	—	60	50	2,2	6	1,24	7300
4042535	KSHRHF100B08RS15HN09	100	117,9	32	—	80	50	2,2	8	1,89	5900
4042536	KSHRHF125B09RS15HN09	125	142,9	40	—	90	63	2,2	9	3,23	4800

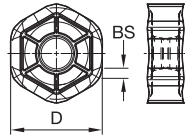
■ Spare Parts



D1	insert screw	Nm	wrench	socket-head cap screw	coolant lock screw assembly	coolant lock screw	coolant shower plate
63	193.492	3,5	170.025	125.025	—	—	—
80	193.492	3,5	170.025	125.230	—	—	—
100	193.492	3,5	170.025	—	MS2189C	—	—
125	193.492	3,5	170.025	—	—	420.200	470.232

NOTE: Coolant lock screw assembly and coolant cap must be ordered separately.

- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2			◇/◆	◆◆		◇◇				
P3-P4			◇/◆	◆◆		◇	◇◇			
P5-P6			◇/◆	◆◆		◇	◇◇			
M1-M2			◇/◆	◆			◆		◆◆	
M3			◇/◆	◆					◆◆	
K1-K2		◆◆				◇◇				
K3		◆◆				◇◇				
N1	◆◆									
N2	◆◆									
S1				◆					◆◆	
S2				◆					◆◆	
S3			◆	◆					◆◆	
S4			◆	◆					◆◆	



ISO catalogue number	D	BS	KC410M	KC520M	KC522M	KC725M	KCK15	KCPK30	KCPM40	KCSM40
Light Machining										
HNGJ0905ANFNLDJ	16	1,80	3849320	-	-	-	-	-	-	-
HNGJ0905ANENLD	16	1,80	-	3331174	3093561	3331175	3330952	3331178	-	6178103



General Machining										
HNGJ0905ANSNGD	16	1,80	-	-	-	3331176	3331173	3093719	5550793	6178104
HNPJ0905ANSNGD	16	1,80	-	3763726	3774250	3763727	3763725	3763728	5550795	-



Heavy Machining										
HNGJ0905ANSNHD	16	1,66	-	-	-	3556331	3556330	3556332	5550794	6178105
HNPJ0905ANSNHD	16	1,66	-	-	3774249	3763723	3763185	3763724	5550796	6178108
HNPJ090543ANSNHD	16	-	-	-	3774251	3763730	3763729	3763731	5550797	6178109
HNGJ090543ANSNHD	16	-	-	-	-	3556374	3556373	3556375	6068043	6178106

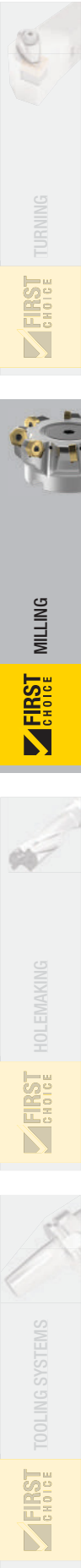
Recommended Starting Feeds

Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
.F..LDJ	0.45	1.27	2.22	0.33	0.91	1.57	0.25	0.68	1.17	0.21	0.59	1.01	0.20	0.54	0.93	.F..LDJ
.E..LD	0.63	1.84	2.81	0.46	1.31	1.97	0.34	0.97	1.46	0.30	0.84	1.27	0.27	0.77	1.16	.E..LD
.S..GD	0.92	2.01	3.27	0.66	1.42	2.29	0.49	1.06	1.69	0.43	0.92	1.46	0.39	0.84	1.34	.S..GD
.S..HD	0.92	2.35	3.89	0.66	1.67	2.70	0.49	1.23	1.98	0.43	1.07	1.72	0.39	0.98	1.57	.S..HD

HNG.....: Ground inserts; high versatility for all medium applications and difficult-to-machine stainless steels and high-temp alloys.
HNP.....: Pressed inserts; lower cost per edge for roughing operations with high feed rates.



Material Group		KC410M*			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	395	340	325	310	275	260
	2	-	-	-	-	-	-	330	290	240	265	230	190
	3	-	-	-	-	-	-	305	260	210	240	205	170
	4	-	-	-	-	-	-	270	220	180	215	180	145
	5	-	-	-	-	-	-	220	205	180	180	160	145
	6	-	-	-	-	-	-	200	150	120	155	120	95
M	1	-	-	-	-	-	-	245	215	200	205	180	160
	2	-	-	-	-	-	-	220	190	155	185	155	130
	3	-	-	-	-	-	-	170	145	115	140	120	95
K	1	-	-	-	325	295	260	275	245	220	-	-	-
	2	-	-	-	250	230	210	215	190	180	-	-	-
	3	-	-	-	210	190	175	180	160	145	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	145	110	85	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	545	475	445	355	310	295	275	240	205
	2	-	-	-	335	305	275	300	260	215	240	205	160
	3	-	-	-	305	275	245	275	235	190	205	180	160
	4	-	-	-	230	210	190	245	205	160	180	160	145
	5	-	-	-	310	275	250	205	185	160	160	145	125
	6	-	-	-	190	160	145	180	140	110	125	110	90
M	1	-	-	-	245	220	185	235	205	185	275	220	180
	2	-	-	-	220	190	170	210	180	150	180	145	125
	3	-	-	-	175	155	140	155	140	110	145	125	110
K	1	505	460	410	355	320	290	-	-	-	-	-	-
	2	400	355	330	280	250	230	-	-	-	-	-	-
	3	335	300	275	235	210	190	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

*Recommended for wet machining only.

NOTE: FIRST choice starting speeds are in **bold** type.

As the average chip thickness increases, the speed should be decreased.

Dry
Wet

Material Group		KC410M			KC520M			KC522M			KC725M		
P	1	-	-	-	-	-	-	315	270	260	250	220	210
	2	-	-	-	-	-	-	265	230	190	210	185	150
	3	-	-	-	-	-	-	245	210	170	190	165	135
	4	-	-	-	-	-	-	215	175	145	170	145	115
	5	-	-	-	-	-	-	175	165	145	145	130	115
	6	-	-	-	-	-	-	160	120	95	125	95	75
M	1	-	-	-	-	-	-	195	170	160	165	145	130
	2	-	-	-	-	-	-	175	150	125	150	125	105
	3	-	-	-	-	-	-	135	115	90	110	95	75
K	1	-	-	-	260	235	210	220	195	175	-	-	-
	2	-	-	-	200	185	170	170	150	145	-	-	-
	3	-	-	-	170	150	140	145	130	115	-	-	-
N	1	1170	1035	955	-	-	-	-	-	-	-	-	-
	2	1035	955	880	-	-	-	-	-	-	-	-	-
	3	1035	955	880	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	25	30	30	25
	2	-	-	-	-	-	-	40	30	25	30	30	25
	3	-	-	-	-	-	-	50	40	25	45	30	25
	4	-	-	-	-	-	-	70	50	30	50	45	30
H	1	-	-	-	-	-	-	115	90	70	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

Material Group		KCK15			KCPK30			KCPM40			KCSM40		
P	1	-	-	-	435	380	355	285	250	235	-	-	-
	2	-	-	-	270	245	220	240	210	170	-	-	-
	3	-	-	-	245	220	195	220	190	150	-	-	-
	4	-	-	-	185	170	150	195	165	130	-	-	-
	5	-	-	-	250	220	200	165	150	130	165	140	115
	6	-	-	-	150	130	120	145	110	90	145	105	75
M	1	-	-	-	195	175	150	190	165	150	200	165	135
	2	-	-	-	175	150	135	170	145	120	170	140	115
	3	-	-	-	140	125	110	125	110	90	140	105	80
K	1	405	370	330	285	255	230	-	-	-	-	-	-
	2	320	285	265	225	200	185	-	-	-	-	-	-
	3	270	240	220	190	170	150	-	-	-	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	40	30	30	40	30	25
	2	-	-	-	-	-	-	40	30	30	40	30	25
	3	-	-	-	-	-	-	50	40	30	50	40	25
	4	-	-	-	65	50	30	65	50	30	55	50	30
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

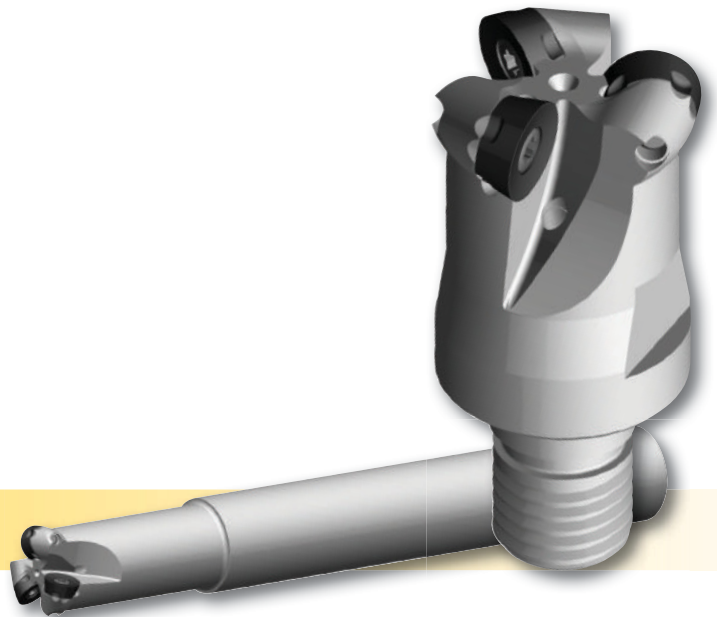
- Dry
- Wet



➤ 7713VR Series

Round Insert Milling Cutter with Indexation

The 7713VR is our newest round insert cutter series. Designed with a new silver-satin surface treatment that reduces body degradation during high-performance applications and enhances body tool life. This cutter series has an anti-rotation design that ensures a precise number of indexes per insert. This enables maximum usage of the available edges for roughing applications.



Features and Benefits

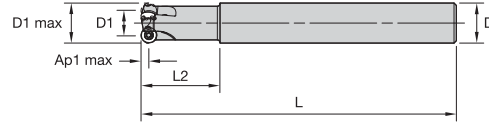
This unique patented pocket system prevents the inserts from rotating in the pocket during heavy-feed machining and unstable conditions. The 7713VR cutter is excellent for roughing and semi-finishing of all materials, especially stainless steel and high-temperature alloys, as well as for steel, and tool steel.



7713VR10:
Maximum a_p = 5mm
Diameter Range = 20–50mm

7713VR12:
Maximum a_p = 6mm
Diameter Range = 32–80mm

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.

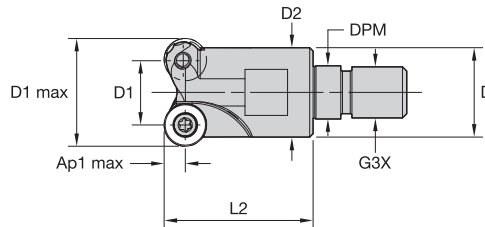


■ Cylindrical End Mills

order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z
5672811	7713VR10CA020Z2R40	20	10	20	180	40	5,0	2
5673047	7713VR10CA025Z3R50	25	15	25	200	50	5,0	3
5673048	7713VR10CA032Z4R70	32	22	32	250	70	5,0	4

■ Spare Parts

D1 max	insert screw	Nm	Torx driver
20	D4007T	3,1	TB15
25	D4007T	3,1	TB15
32	D4008T	3,1	TB15



■ Screw-On End Mills

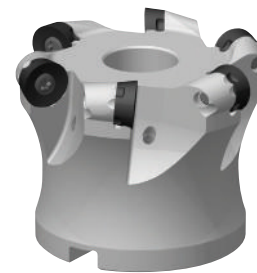
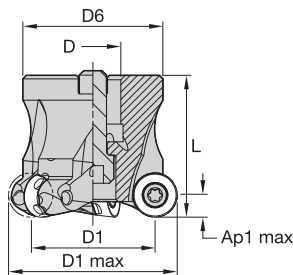
order number	catalogue number	D1 max	D1	D	D2	L2	G3X	DPM	Ap1 max	Z
5673768	7713VR10SA025Z3R35	25	15	21	24	35	M12	12,50	5,0	3
5673050	7713VR10SA032Z4R35	32	22	29	31	35	M16	17,00	5,0	4
5673341	7713VR10SA035Z5R35	35	25	29	34	35	M16	17,00	5,0	5

■ Spare Parts

D1 max	insert screw	Nm	Torx driver
20	D4007T	3,1	TB15
25	D4007T	3,1	TB15
32	D4008T	3,1	TB15
35	D4007T	3,1	TB15



- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.



■ Shell Mills

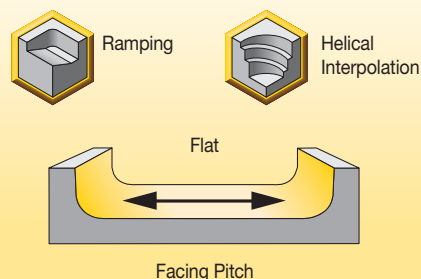
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5672813	7713VR10-A040Z05R	40	30	16	36	40	5,0	5
5672625	7713VR10-A042Z06R	42	32	16	38	40	5,0	6
5673340	7713VR10-A050Z06R	50	40	22	41	40	5,0	6

■ Spare Parts

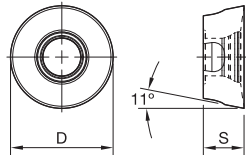
D1 max	insert screw	Nm	Torx driver	socket-head cap screw
40	D4008T	3,1	TB15	M8 1.25 X 25 SHCS
42	D4007T	3,1	TB15	M8 1.25 X 25 SHCS
50	D4008T	3,1	TB15	M10 1.5 X 25 SHCS
63	D4008T	3,1	TB15	M10 1.5 X 25 SHCS

■ Technical Information (mm)

order number	catalogue number	facing pitch	ramping angle	dimension		ap max helical/linear	max RPM
				helical hole min-max			
5672811	7713VR10CA020Z2R40	10	1,89	22	38	3,33	79500
5673047	7713VR10CA025Z3R50	15	5,22	32	48	3,33	64500
5673048	7713VR10CA032Z4R70	22	8,64	46	62	3,33	53500
5672813	7713VR10-A040Z05R	30	7,28	62	78	3,33	45500
5672625	7713VR10-A042Z06R	32	6,71	66	82	3,33	39500
5673340	7713VR10-A050Z06R	40	5,22	82	98	3,33	39500
5673768	7713VR10SA025Z3R35	15	5,22	32	48	3,33	64500
5673050	7713VR10SA032Z4R35	22	8,64	46	62	3,33	53500
5673341	7713VR10SA035Z5R35	25	7,20	52	68	3,33	50000



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2	◇/◆	◇◇	◇/◆	
P3-P4		◆◆	◇/◆	
P5-P6			◆◆	◇/◆
M1-M2	◆◆	◇◇	◆	
M3	◆	◆	◆◆	
K1-K2		◇	◇/◆	
K3		◆	◇/◆	
N1				
N2				
S1	◆		◆◆	◆
S2	◆		◆◆	◆
S3	◆◆		◆	
S4	◆◆		◆	◆



ISO catalogue number	D	S	hm	CE	KCSM40	SP6519	X500	X700
Light Machining								
RPHT10T3M0E422X8	10,00	3,96	0,03	8	-	5660778	-	-



General Machining								
RPHT10T3M0E422X4	10,00	3,97	0,03	4	-	5659867	5660462	5665491
RPPT10T3M0E432X4	10,00	3,97	0,04	4	6201907	-	-	-
RPPT10T3M0E432X5	10,00	3,97	0,03	5	-	-	5894139	-

NOTE: CE: number of indexes
 ap max recommendation to use all indexes of the insert:
 ..E422x8: ap recommended ≤ 1,5mm, ap max ≤ 2,5mm
 ..E422X4: ap recommended ≤ 2,5mm, ap max ≤ 5mm
 ..E432X4: ap recommended ≤ 2,5mm, ap max ≤ 5mm
 ..E432X5: ap recommended ≤ 2mm, ap max ≤ 3,5mm

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
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At 5,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
422-X8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	422-X8
432-X5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	432-X5
422-X4	0,12	0,29	0,57	0,08	0,21	0,40	0,06	0,16	0,30	0,05	0,14	0,26	0,05	0,13	0,24	422-X4
432-X4	0,12	0,29	0,57	0,08	0,21	0,40	0,06	0,16	0,30	0,05	0,14	0,26	0,05	0,13	0,24	432-X4

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
422-X8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	422-X8
432-X5	0,13	0,34	0,66	0,10	0,24	0,47	0,07	0,18	0,35	0,06	0,16	0,30	0,06	0,15	0,28	432-X5
422-X4	0,13	0,34	0,66	0,10	0,24	0,47	0,07	0,18	0,35	0,06	0,16	0,30	0,06	0,15	0,28	422-X4
432-X4	0,13	0,34	0,66	0,10	0,24	0,47	0,07	0,18	0,35	0,06	0,16	0,30	0,06	0,15	0,28	432-X4

At 2,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
422-X8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	422-X8
432-X5	0,14	0,37	0,71	0,10	0,26	0,51	0,08	0,20	0,38	0,07	0,17	0,33	0,06	0,16	0,30	432-X5
422-X4	0,14	0,37	0,71	0,10	0,26	0,51	0,08	0,20	0,38	0,07	0,17	0,33	0,06	0,16	0,30	422-X4
432-X4	0,14	0,37	0,71	0,10	0,26	0,51	0,08	0,20	0,38	0,07	0,17	0,33	0,06	0,16	0,30	432-X4

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	10%			20%			30%			40%			50-100%			
422-X8	0,16	0,41	0,80	0,12	0,30	0,57	0,09	0,22	0,42	0,08	0,19	0,37	0,07	0,18	0,34	422-X8
432-X5	0,16	0,41	0,80	0,12	0,30	0,57	0,09	0,22	0,42	0,08	0,19	0,37	0,07	0,18	0,34	432-X5
422-X4	0,16	0,41	0,80	0,12	0,30	0,57	0,09	0,22	0,42	0,08	0,19	0,37	0,07	0,18	0,34	422-X4
432-X4	0,16	0,41	0,80	0,12	0,30	0,57	0,09	0,22	0,42	0,08	0,19	0,37	0,07	0,18	0,34	432-X4

Material Group		KCSM40			SP6519			X500			X700		
P	1	275	240	205	355	260	155	325	240	155	-	-	-
	2	240	205	160	310	230	140	290	215	140	-	-	-
	3	205	180	160	275	200	120	250	185	120	-	-	-
	4	180	160	145	210	150	90	190	145	90	-	-	-
	5	160	145	125	170	125	85	155	120	85	160	125	85
	6	125	110	90	145	100	60	130	95	60	140	100	60
M	1	275	220	180	325	235	140	300	220	140	310	230	140
	2	180	145	125	280	205	125	265	190	120	275	205	125
	3	145	125	110	235	170	100	215	155	95	230	170	100
K	1	-	-	-	355	265	170	310	265	205	-	-	-
	2	-	-	-	290	210	130	265	215	155	-	-	-
	3	-	-	-	265	190	120	205	170	120	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

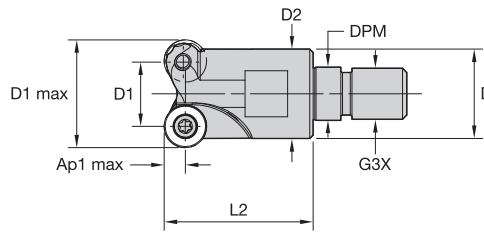


Material Group		KCSM40			SP6519			X500			X700		
P	1	-	-	-	285	210	125	260	190	125	-	-	-
	2	-	-	-	250	185	110	230	170	110	-	-	-
	3	-	-	-	220	160	95	200	150	95	-	-	-
	4	-	-	-	170	120	70	150	115	70	-	-	-
	5	165	140	115	135	100	70	125	95	70	130	100	70
	6	145	105	75	115	80	50	105	75	50	110	80	50
M	1	200	165	135	260	190	110	240	175	110	250	185	110
	2	170	140	115	225	165	100	210	150	95	220	165	100
	3	140	105	80	190	135	80	170	125	75	185	135	80
K	1	-	-	-	285	210	135	250	210	165	-	-	-
	2	-	-	-	230	170	105	210	170	125	-	-	-
	3	-	-	-	210	150	95	165	135	95	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	40	30	25	50	40	25	50	30	25	50	40	25
	2	40	30	25	50	30	20	45	30	20	45	30	20
	3	50	40	25	50	40	25	50	40	25	50	40	25
	4	55	50	30	75	55	35	70	50	30	70	50	35
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

- Dry
- Wet

- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.

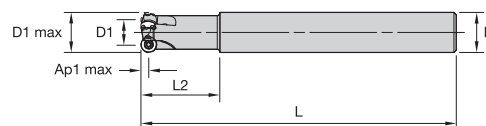


■ Screw-On End Mills

order number	catalogue number	D1 max	D1	D	D2	L2	G3X	DPM	Ap1 max	Z
5673052	7713VR12SA032Z3R35	32	20	29	31	35	M16	17,00	6,0	3
5673439	7713VR12SA040Z4R43	40	28	29	38	43	M16	17,00	6,0	4

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7713VR12SA032Z3R35	D4008T	3,1	T15
7713VR12SA040Z4R43	D4008T	3,1	T15



■ Cylindrical End Mills

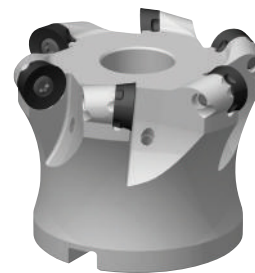
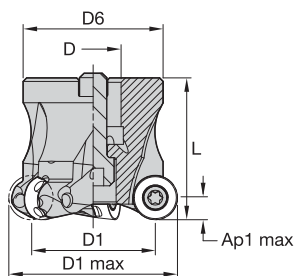
order number	catalogue number	D1 max	D1	D	L	L2	Ap1 max	Z
5673830	7713VR12CA032Z3R70	32	20	32	250	70	6,0	3

■ Spare Parts

catalogue number	insert screw	Nm	Torx driver
7713VR12CA032Z3R70	D4008T	3,1	T15



- Copy/contour milling applications.
- Patented locking system prevents insert rotation during heavy machining.
- Positive flute design for excellent chip evacuation.



Shell Mills

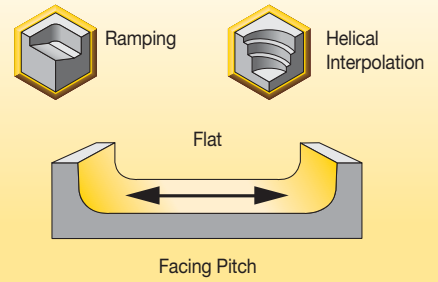
order number	catalogue number	D1 max	D1	D	D6	L	Ap1 max	Z
5672232	7713VR12-A040Z04R	40	28	16	34	40	6,0	4
5672233	7713VR12-A050Z05R	50	38	22	43	40	6,0	5
5673769	7713VR12-A052Z05R	52	40	22	45	40	6,0	5
5672234	7713VR12-A063Z06R	63	51	22	56	50	6,0	6
5672235	7713VR12-A066Z06R	66	54	27	56	50	6,0	6
5673829	7713VR12-A080Z08R	80	68	27	68	50	6,0	8

Spare Parts

catalogue number	insert screw	Nm	Torx driver	mounting screw
7713VR12-A040Z04R	D4010T	3,1	T15	M8 1.25 X 25 SHCS
7713VR12-A050Z05R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A052Z05R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A063Z06R	D4010T	3,1	T15	M10 1.5 X 25 SHCS
7713VR12-A066Z06R	D4010T	3,1	T15	M12 X 1.75 X 30 SHCS
7713VR12-A080Z08R	D4010T	3,1	T15	M12 X 1.75 X 30 SHCS

■ Technical Information (mm)

order number	catalogue number	facing pitch	ramping angle	dimension		ap max helical/linear	max RPM
				helical hole min-max			
5673830	7713VR12CA032Z3R70	20	10,80	42	62	4,00	40000
5672232	7713VR12-A040Z04R	28	7,90	58	78	4,00	34000
5672233	7713VR12-A050Z05R	38	5,50	78	98	4,00	29000
5673769	7713VR12-A052Z05R	40	5,15	82	102	4,00	28500
5672234	7713VR12-A063Z06R	51	3,85	104	124	4,00	25000
5672235	7713VR12-A066Z06R	54	3,60	110	130	4,00	24500
5673829	7713VR12-A080Z08R	68	2,75	138	158	4,00	21500
5673052	7713VR12SA032Z3R35	20	10,80	42	62	4,00	40000
5673439	7713VR12SA040Z4R43	28	7,90	58	78	4,00	34000



TURNING



MILLING



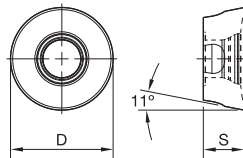
HOLEMAKING





TOOLING SYSTEMS



- ◆◆ first choice with coolant
- ◇◇ first choice without coolant
- ◆ alternate choice with coolant
- ◇ alternate choice without coolant



P1-P2	◇◇	◇/◆	
P3-P4	◆◆	◇/◆	
P5-P6		◆◆	◇/◆
M1-M2	◇◇	◆	
M3	◆	◆◆	
K1-K2	◇	◇/◆	
K3	◆	◇/◆	
N1			
N2			
S1		◆◆	◆
S2		◆◆	◆
S3		◆◆	
S4		◆	◆◆

ISO catalogue number	D	S	hm	CE	SP6519	X500	X700
Light Machining							
 RPHT1204M0E422X4	12,00	4,76	0,04	4	-	5666015	-
RPHT1204M0E442X4	12,00	4,76	0,04	4	5659264	5660351	-
RPHT1204M0E442X5	12,00	4,76	0,04	5	5658324	5657681	-
General Machining							
 RPPT1204M0E432X4	12,00	4,76	0,04	4	-	5970235	-
RPPT1204M0E432X5	12,00	4,76	0,04	5	-	5675038	5674803
RPHT1204M0TX4	12,00	4,76	0,10	4	-	5654371	-

NOTE: CE: number of indexes
ap max recommendation to use all indexes of the insert:
 ..E422X4: ap recommended ≤ 3,5mm, ap max ≤ 6mm
 ..E422X5: ap recommended ≤ 2,5mm, ap max ≤ 4mm
 ..E432X4: ap recommended ≤ 3,5mm, ap max ≤ 6mm
 ..E432X5: ap recommended ≤ 2,5mm, ap max ≤ 4mm
 ..MOTX4: ap recommended ≤ 3,5mm, ap max ≤ 6mm

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

■ Recommended Starting Feeds [mm]

Light Machining	General Purpose	Heavy Machining
--------------------	--------------------	--------------------

At 6,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
432-X5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	432-X5
442-X4	0,23	0,41	0,66	0,17	0,30	0,47	0,13	0,22	0,35	0,11	0,19	0,31	0,10	0,18	0,28	442-X4
432-X4	0,23	0,41	0,66	0,17	0,30	0,47	0,13	0,22	0,35	0,11	0,19	0,31	0,10	0,18	0,28	432-X4
T-X4	0,23	0,41	0,66	0,17	0,30	0,47	0,13	0,22	0,35	0,11	0,19	0,31	0,10	0,18	0,28	T-X4

At 3,00 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
432-X5	0,16	0,49	0,93	0,12	0,35	0,66	0,09	0,26	0,49	0,08	0,23	0,43	0,07	0,21	0,39	432-X5
442-X4	0,16	0,49	0,93	0,12	0,35	0,66	0,09	0,26	0,49	0,08	0,23	0,43	0,07	0,21	0,39	442-X4
432-X4	0,16	0,49	0,93	0,12	0,35	0,66	0,09	0,26	0,49	0,08	0,23	0,43	0,07	0,21	0,39	432-X4
T-X4	0,27	0,68	1,10	0,19	0,49	0,78	0,14	0,36	0,58	0,13	0,32	0,50	0,12	0,29	0,46	T-X4

At 2,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
432-X5	0,17	0,52	1,00	0,12	0,37	0,71	0,09	0,28	0,53	0,08	0,24	0,46	0,07	0,22	0,42	432-X5
442-X4	0,17	0,52	1,00	0,12	0,37	0,71	0,09	0,28	0,53	0,08	0,24	0,46	0,07	0,22	0,42	442-X4
432-X4	0,17	0,52	1,00	0,12	0,37	0,71	0,09	0,28	0,53	0,08	0,24	0,46	0,07	0,22	0,42	432-X4
T-X4	0,29	0,73	1,18	0,21	0,52	0,84	0,15	0,39	0,62	0,13	0,34	0,54	0,12	0,31	0,49	T-X4

At 1,50 Axial Depth of Cut (ap)

Insert Geometry	Recommended Starting Feed per Tooth (Fz) in Relation to % of Radial Engagement (ae)															Insert Geometry
	5%			10%			20%			30%			40-100%			
432-X5	0,21	0,64	1,23	0,15	0,46	0,87	0,11	0,34	0,65	0,10	0,30	0,56	0,09	0,27	0,51	432-X5
442-X4	0,21	0,64	1,23	0,15	0,46	0,87	0,11	0,34	0,65	0,10	0,30	0,56	0,09	0,27	0,51	442-X4
432-X4	0,21	0,64	1,23	0,15	0,46	0,87	0,11	0,34	0,65	0,10	0,30	0,56	0,09	0,27	0,51	432-X4
T-X4	0,35	0,90	1,47	0,25	0,64	1,03	0,19	0,47	0,76	0,17	0,41	0,66	0,15	0,38	0,60	T-X4





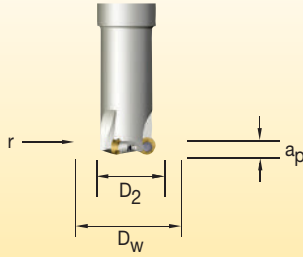
Material Group		SP6519			X500			X700		
P	1	355	260	155	325	240	155	-	-	-
	2	310	230	140	290	215	140	-	-	-
	3	275	200	120	250	185	120	-	-	-
	4	210	150	90	190	145	90	-	-	-
	5	170	125	85	155	120	85	160	125	85
	6	145	100	60	130	95	60	140	100	60
M	1	325	235	140	300	220	140	310	230	140
	2	280	205	125	265	190	120	275	205	125
	3	235	170	100	215	155	95	230	170	100
K	1	355	265	170	310	265	205	-	-	-
	2	290	210	130	265	215	155	-	-	-
	3	265	190	120	205	170	120	-	-	-
N	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
S	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-
H	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-

Material Group		KCSM40			SP6519			X500			X700		
P	1	-	-	-	285	210	125	260	190	125	-	-	-
	2	-	-	-	250	185	110	230	170	110	-	-	-
	3	-	-	-	220	160	95	200	150	95	-	-	-
	4	-	-	-	170	120	70	150	115	70	-	-	-
	5	165	140	115	135	100	70	125	95	70	130	100	70
	6	145	105	75	115	80	50	105	75	50	110	80	50
M	1	200	165	135	260	190	110	240	175	110	250	185	110
	2	170	140	115	225	165	100	210	150	95	220	165	100
	3	140	105	80	190	135	80	170	125	75	185	135	80
K	1	-	-	-	285	210	135	250	210	165	-	-	-
	2	-	-	-	230	170	105	210	170	125	-	-	-
	3	-	-	-	210	150	95	165	135	95	-	-	-
N	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-
S	1	40	30	25	50	40	25	50	30	25	50	40	25
	2	40	30	25	50	30	20	45	30	20	45	30	20
	3	50	40	25	50	40	25	50	40	25	50	40	25
	4	55	50	30	75	55	35	70	50	30	70	50	35
H	1	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-

NOTE: FIRST choice starting speeds are in **bold** type.
As the average chip thickness increases, the speed should be decreased.

Dry
 Wet

7713VR Technical Information



Working Diameter:

Formula to evaluate the correct working diameter based on axial depth of cut (ap).

$$D_w = D_2 + 2 \times \sqrt{r^2 - (r - a_p)^2}$$

where:

- D_w = Working diameter
- D_2 = Diameter of cutter insert centre to centre
- r = Insert radius
- a_p = Axial depth of cut

where:

- f_z = Feed per tooth
- h_m = Average chip thickness
- r = Insert radius
- a_e = Radial depth of cut
- a_p = Axial depth of cut

Formula to find programmed feed rate based on radial engagement and axial depth of cut.

$$f_z = \frac{h_m}{\frac{\sqrt{r^2 - (r - a_e)^2}}{r} \times \frac{\sqrt{r^2 - (r - a_p)^2}}{r}}$$

Formula to calculate the average chip thickness h_m in relation with radial engagement and depth of cut.

$$h_m = f_z \times \frac{\sqrt{r^2 - (r - a_e)^2}}{r} \times \frac{\sqrt{r^2 - (r - a_p)^2}}{r}$$

Simplified formulas to evaluate h_m and f_z based on radial engagement or depth of cut.

Calculation of the average chip thickness in relation with the D.O.C. (Axial)

Formula: Programme Feed Rate (f_z)

$$f_z = h_m \times \sqrt{\frac{d}{a_p}}$$

- h_m = Average chip thickness
- a_p = Depth of cut
- f_z = Feed per tooth
- d = Insert diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{a_e}{d}}$$

Calculation of the average chip thickness in relation with the a_e (Radial Engagement) if a_e is less than 50% of diameter

Formula: Programme Feed Rate (f_z)

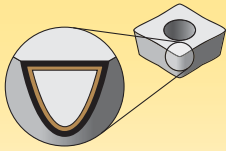
$$f_z = h_m \times \sqrt{\frac{d}{a_e}}$$

- h_m = Average chip thickness
- a_e = Radial engagement
- f_z = Feed per tooth
- d = Cutter diameter

Formula: Average Chip Thickness (h_m)

$$h_m = f_z \times \sqrt{\frac{d}{a_p}}$$





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

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

wear resistance ← → toughness

Grades

Coating	Grade Description		05	10	15	20	25	30	35	40	45
GH2	Uncoated, fine grained carbide grade with good strength. GH2 is suitable for machining of aluminium and non-ferrous materials. Also good choice for cast iron for medium toughness requirements. This grade can be used both wet and dry and is designed for light and general machining.										
		K									
		N									
		S									
KC410M	PVD, TiB ₂ coating on grade KC410M is extremely hard and provides very good wear characteristics at higher cutting speeds. KC410M resists built-up edge, can help reduce burring, and generates excellent surface finishes. The grade is best suited for aluminium with <10% silicon and other non-ferrous materials.										
		N									
KC422M	The PVD TiB ₂ coating is very wear resistant. Together with hard coating and a tough substrate, this is an excellent combination for medium to roughing applications in aluminium <10% silicon and other non-ferrous materials.										
		N									
KC510M	Coated carbide grade with a TiAlN coating (PVD). KC510M is a highly wear-resistant grade primarily for use in milling aluminium and high-temperature alloys in light applications. Can also be used for machining of steel and hardened steel.	P									
		N									
		S									
		H									
KC520M	Coated carbide grade with TiAlN coating (PVD). KC520M is a carbide grade developed specifically for general machining of ductile cast iron. This grade can be used with or without coolant.										
		K									
KC522M	Coated carbide grade with AlTiN (PVD) coating. KC522M is engineered to provide better performance in general machining of high-temperature alloys and stainless steel. KC522M resists breakage and offers improved wear resistance and increased strength.	P									
		M									
		K									
		S									

TURNING

FIRST CHOICE

MILLING

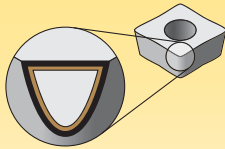
FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



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

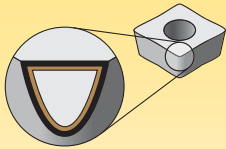
P	Steel
M	Stainless Steel
K	Cast Iron
N	Non-Ferrous
S	High-Temp Alloys
H	Hardened Materials

wear resistance ← → toughness

Grades

Coating	Grade Description		05	10	15	20	25	30	35	40	45
KC725M	Coated carbide grade with an advanced PVD TiAlN coating. KC725M is a high-performance grade for milling steel, stainless steel, and ductile cast iron. The good thermal shock resistance of the substrate makes this grade ideal for both wet and dry machining. Primarily for use in general and heavy machining.	P									
		M									
KCK15	Coated carbide grade with CVD multilayer coating (TiN/MT TiCN/Al ₂ O ₃) and advanced Beyond™ post-coat treatment. KCK15 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results in dry, but can also be used wet.	K									
		S									
KCPK30	Coated carbide grade with CVD multilayer (TiN/TiCN/Al ₂ O ₃) and advanced Beyond™ post-coat treatment. Substrate is very tough. KCPK30 has a wide application area in general and roughing milling of steels and cast irons. Performs best dry, but can also be used wet.	P									
		K									
KCPM40	Coated carbide grade with an advanced PVD TiAlN/AlCrN coating. Tough substrate with excellent capability at higher temperatures. KCPM40™ is the first choice for milling steel and stainless steel. Good thermal shock resistance makes this grade ideal for both wet and dry machining. Primarily for use in general and heavy machining.	P									
		M									
KCSM40	Coated carbide grade with an advanced PVD TiAlN/TiN coating. Premium substrate with newly developed binder composition. KCSM40 is a high-performance grade for titanium, super alloys, and stainless steel. High thermal shock resistance of the substrate makes this grade ideal for wet machining. First choice for roughing and unsuitable cutting conditions.	M									
		S									
KY3500	A ceramic cutting material based on micro-grain Si ₃ N ₄ primarily for use in light to general machining of grey cast iron and ferritic ductile cast iron. Dry machining is preferred while using this grade.	K									
		H									





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

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

wear resistance ← → toughness

Grades

Coating	Grade Description		05	10	15	20	25	30	35	40	45
SC3025	Coated carbide grade with CVD multilayer coating (TiN/TiCN/Al ₂ O ₃). SC3025 is a wear-resistant grade with balanced toughness for general milling of cast irons at higher speeds. Best results when using dry, but can also be used wet.	P									
		M									
		K									
		N									
		S									
SC6525	Coated carbide grade with CVD multi-layer (TiN/TiCN/Al ₂ O ₃). Tough substrate with good speed capability. SC6525 has a wide application area in general and roughing milling of steels, stainless steels, and cast irons. Performs best dry, but can also be used wet.	P									
		M									
		K									
		N									
		S									
SP6519	Coated carbide grade with PVD TiAlN nano-composite coating on a tough substrate. Primarily for use in general and heavy machining, dry and wet.	P									
		M									
		K									
		N									
		S									
X400	Coated carbide grade with thick PVD TiAlN nanocomposite on X-Grade™ technology substrate. With excellent toughness, good choice for difficult cutting conditions on alloyed and hardened steels. Usable in combination with high feeds.	P									
		M									
		K									
		N									
		S									
X500	CVD TiN/TiCN/TiN coated carbide on tough substrate (X-Grade™ technology). For difficult applications with heavy impacts, vibrations, or unstable conditions. High stability against thermal cracks. Excellent grade for high-temperature alloys, stainless steels, and titanium.	P									
		M									
		K									
		N									
		S									
X700	PVD TiAlN nano-coating on premium substrate (X-Grade™ technology). Milling of stainless steel, super alloys, and titanium with medium applications.	P									
		M									
		K									
		N									
		S									

TURNING

FIRST CHOICE

MILLING

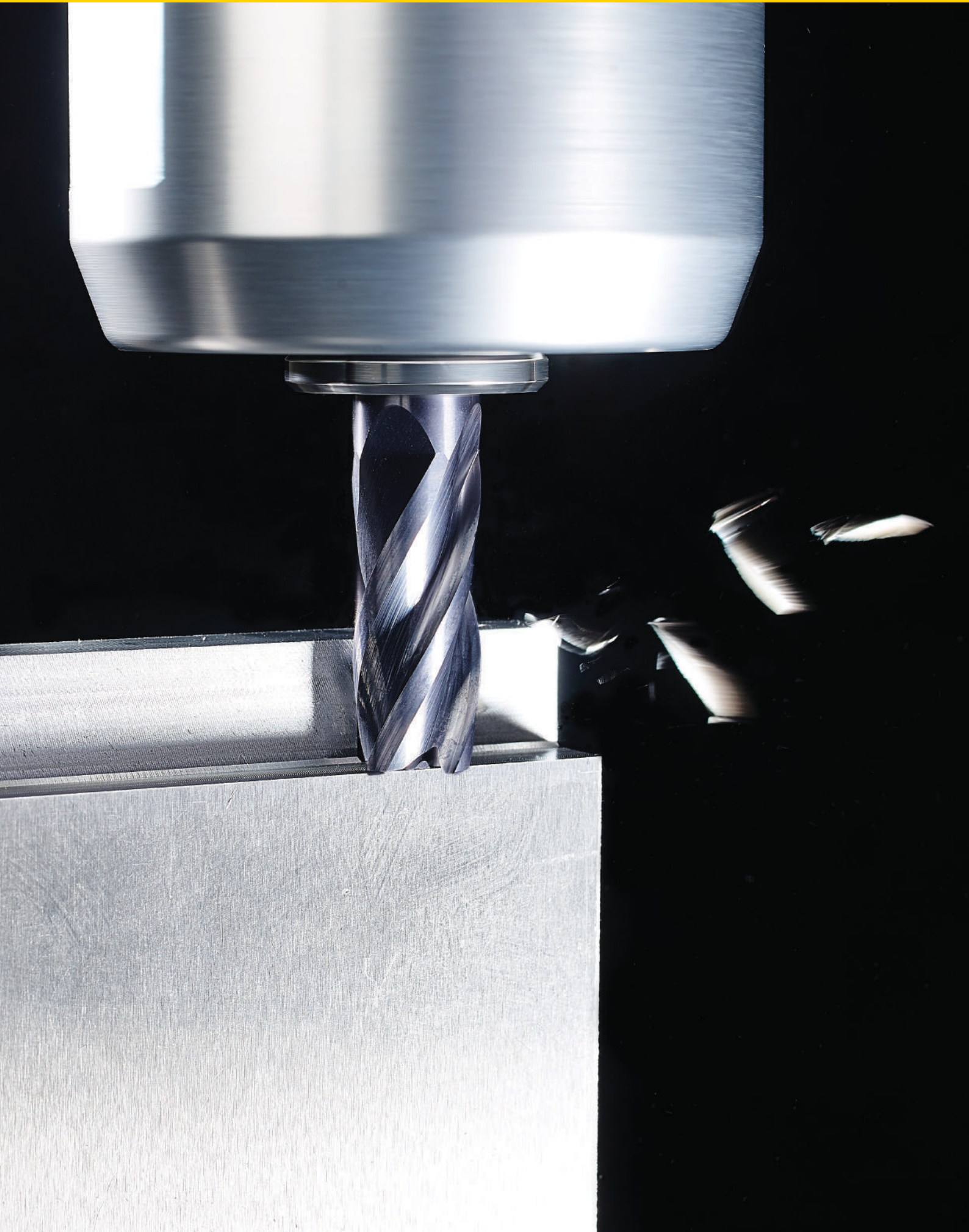
FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



Platform	Unequal Fluting	series	flute Z	D1 diameter (mm)	length of cut (mm)	helix	
High Performance							
HARVI™ I Duo-Lock™		UKDV		ZU-4	10-32	1,5 x D	
HARVI I Duo-Lock		ULDV		ZU-4	10-32	1,5 x D	
HARVI I TE		H1TE_CH		ZU-4	4-25	1,8-3 x D	
HARVI I TE		H1TE_CH		ZU-4	4-25	1,8-3 x D	
HARVI I TE		H1TE_R		ZU-4	6-25	1,3-2 x D	
HARVI I TE		H1TE_SE		ZU-4	4-25	1,8-3 x D	
HARVI I TE		H1TE_CH_S		ZU-4	4-25	1,3-2 x D	
HARVI I TE		H1TE_SE_S		ZU-4	4-25	1,3-2 x D	
HARVI II		UCDE		ZU-5	4-25	~2,5 x D1	
HARVI II		UDDE		ZU-5	6-25	~2 x D1	
HARVI II		UGDE		ZU-5	6-25	5 x D	
HARVI III		UJDE		ZU-6	12-20	3 x D	
Rougher		F3BH F4BJ F5BJ		ZU-3 ZU-4 ZU-5	4-25	~2 x D1	
Rougher		RUDC		ZU-3 ZU-4 ZU-5	4-25	2 x D	
Aluminium MaxiMet™		ABDF		ZU-2	1,5-20	1,9-4 x D1	
Aluminium MaxiMet		ABDE		ZU-3	3-20	1,9-4 x D1	
Aluminium MaxiMet		ABDE extended neck		ZU-3	6-25	1,5 x D	
General Purpose							
G0mill™ GP		2CH		ZU-2	2-20	1-2,5 x D1	
G0mill GP		2BN		ZU-2	2-20	1-3 x D1	
G0mill GP		3CH		ZU-3	2-20	1-3 x D1	
G0mill GP		4CH		ZU-4	2-20	1,3-3,2 x D1	
G0mill GP		4BN		ZU-4	3-20	1,9-2,75 x D1	

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

centre cutting	neck				P	M	K	N	S	H	product page(s)	cutting data page(s)
High Performance (continued)												
					•	•	•		○	○	B142	B144
					•	•	•		•	○	B143	B145
					•	•	•		•	○	B150-B151	B162
					•	•	•		•	○	B152-B153	B162
					•	•	•		•	○	B154-B155	B163
					•	•	•		•	○	B156-B157	B163
					•	•	•		•	○	B158-B159	B164
					•	•	•		•	○	B160-B161	B164
				Max 4°	•	•	•			○	B168	B170
				Max 4°		•	•		•	○	B169	B170
					•	•	•		•	○	B174	B175
					○	•	•		•	○	B178	B179
					•	•	•			○	B182	B184
					•	•	•		•	○	B183	B185
								•			B188	B191
								•			B189	B191
								•			B190	B191
General Purpose (continued)												
					•	•	•				B194-B195	B198
					•	•	•				B196-B197	B199
					•	•	•				B202	B203
					•	•	•				B206-B207	B210
					•	•	•				B208-B209	B211

TURNING
MILLING
HOLEMAKING

➤ DUO-ΛOCK[®] HARVI[™]

Primary Application

HARVI geometries for Duo-Lock[™] target applications where solid carbide end mills are currently used. The Duo-Lock system combines the highest runout accuracy and length repeatability with maximum coupling stability. This enables the Duo-Lock system to use the full potential of Kennametal cutting geometries and grades with the flexibility of a modular system. Significant metal removal rates can be achieved. A wide range of diameters and corner configurations, such as chamfer and radii, are available from stock.

- Cutting data and tool life comparable to high-performance solid carbide.
- Proprietary HARVI geometries enable roughing and finishing with one tool.
- 1,5 x D standard cutting edge length enables fewer passes.
- Up to 1 x D full slotting increases metal removal rates, increasing productivity significantly.

Features and Benefits

Advanced Technology

- New asymmetrical HARVI 4-flute geometry for higher feed-per-tooth rates.
- Variable helix design for chatter-free machining at high feed rates.
- Less pressure on cutting edge through tailored axial and radial rake angles.
- Eccentric relief design increases tool life through higher edge stability.
- Proprietary tapered core for highest tool stability when roughing and finishing.

Tailored Grades

- KCSM15[™] Beyond[™] grade for exceptional tool life in titanium and stainless steels.
- KCPM15[™] Beyond grade for outstanding wear protection in stainless steel to mitigate cratering, depth-of-cut notching, and flank wear.

Customisation

- Intermediate diameters are available between 10–32mm.
- Chip divider geometry helps reduce power usage and improve chip formation in difficult-to-cut materials.
- Engineered solutions including shank and non-standard length versions available.
- Custom solutions within standard blank dimension are available.

Extensive Standard Offering

- Diameter ranges 10–32mm.
- Steel extensions with Safe-Lock[™] by HAIMER[®] shanks to prevent pullout.

High-performance modular solid carbide end mills.



High-Performance Geometries

Highest metal removal rates with up to 1 x D full slotting and up to 1,5 x D side milling at 50% ae capability.

Unequal Flute Spacing

Reduces vibrations. Improves surface finish.

37°/39° Variable Helix Technology

Minimises chatter and harmonics for smoother machining.

Intelligent Thread

Ensures that stress levels remain below critical values.

3rd Contact Surface

Delivers high stiffness and highest accuracy below 5µm runout.

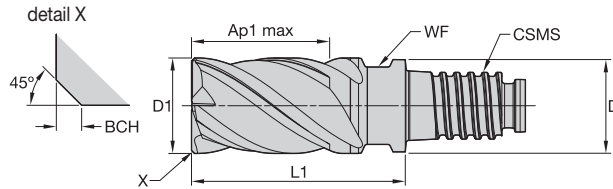
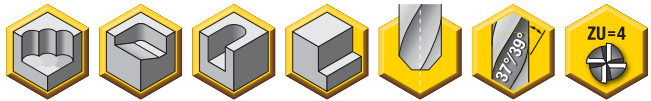
Double Cone

Eliminates expensive presetting processes by providing an axial 10µm repeatability.

DUO-LOCK®
by HAIMER® and Kennametal



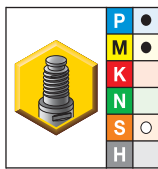
- Asymmetrical flute spacing and variable helix configuration minimises chatter and harmonics for smoother machining.
- Centre cutting.
- Single tool for both roughing and finishing, reducing setups.
- Standard items listed. Additional styles and coatings made-to-order.



End Mill Tolerances

D1	tolerance e8
> 10-18	-0,032/-0,059
> 18-30	-0,040/-0,073
> 30	-0,050/-0,089

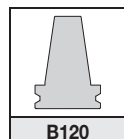
■ UKDV • 4 Flute • Metric



grade KCPM15

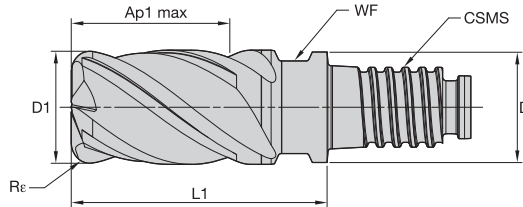
- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L1	CSMS system size	WF	BCH
6072110	UKDV1000X4CV	10,00	9,60	15,00	22,50	DL10	8,00	0,50
6072161	UKDV1200X4CV	12,00	11,50	18,00	27,00	DL12	9,50	0,50
6072162	UKDV1600X4CV	16,00	15,50	24,00	36,00	DL16	13,00	0,50
6072163	UKDV2000X4CV	20,00	19,30	30,00	45,00	DL20	16,00	0,50
6072164	UKDV2500X4CV	25,00	24,00	37,50	56,50	DL25	21,00	0,50
6072165	UKDV3200X4CV	32,00	31,00	48,00	71,70	DL32	28,00	0,50

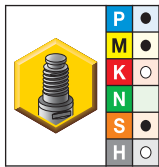


B120

- Asymmetrical flute spacing and variable helix configuration minimises chatter and harmonics for smoother machining.
- Centre cutting.
- Single tool for both roughing and finishing, reducing setups.
- Standard items listed. Additional styles and coatings made-to-order.


End Mill Tolerances

D1	tolerance e8
> 10-18	-0,032/-0,059
> 18-30	-0,040/-0,073
> 30	-0,050/-0,089

■ ULDV • 4 Flute • Metric


grade KCSM15

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L1	CSMS system size	WF	Re
6072166	ULDV1000X4CQE	10,00	9,60	15,00	22,50	DL10	8,00	0,50
6072167	ULDV1000X4CQG	10,00	9,60	15,00	22,50	DL10	8,00	1,00
6072168	ULDV1000X4CQJ	10,00	9,60	15,00	22,50	DL10	8,00	1,50
6072169	ULDV1200X4CQE	12,00	11,50	18,00	27,00	DL12	9,50	0,50
6072170	ULDV1200X4CQG	12,00	11,50	18,00	27,00	DL12	9,50	1,00
6072181	ULDV1200X4CQJ	12,00	11,50	18,00	27,00	DL12	9,50	1,50
6072182	ULDV1200X4CQL	12,00	11,50	18,00	27,00	DL12	9,50	2,50
6072183	ULDV1600X4CQG	16,00	15,50	24,00	36,00	DL16	13,00	1,00
6072184	ULDV1600X4CQJ	16,00	15,50	24,00	36,00	DL16	13,00	1,50
6072185	ULDV1600X4CQK	16,00	15,50	24,00	36,00	DL16	13,00	2,00
6072186	ULDV1600X4CQL	16,00	15,50	24,00	36,00	DL16	13,00	2,50
6072187	ULDV1600X4CQM	16,00	15,50	24,00	36,00	DL16	13,00	3,00
6072188	ULDV2000X4CQG	20,00	19,30	30,00	45,00	DL20	16,00	1,00
6072189	ULDV2000X4CQK	20,00	19,30	30,00	45,00	DL20	16,00	2,00
6072190	ULDV2000X4CQL	20,00	19,30	30,00	45,00	DL20	16,00	2,50
6072191	ULDV2000X4CQM	20,00	19,30	30,00	45,00	DL20	16,00	3,00
6072192	ULDV2000X4CQN	20,00	19,30	30,00	45,00	DL20	16,00	4,00
6072193	ULDV2500X4CQL	25,00	24,00	37,50	56,50	DL25	21,00	2,50
6072194	ULDV2500X4CQN	25,00	24,00	37,50	56,50	DL25	21,00	4,00
6072195	ULDV3200X4CQL	32,00	31,00	48,00	71,70	DL32	28,00	2,50
6072196	ULDV3200X4CQN	32,00	31,00	48,00	71,70	DL32	28,00	4,00



■ HARVI • UKDV • Asymmetrical Flute Spacing

Material Group														Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.							
	Side Milling (A) and Slotting (B)			short		medium			long			D1 – Diameter									
	A		B	adaptor reach																	
				KCPM15			KCPM15			KCPM15											
	ap		ae	Cutting Speed – vc m/min		Cutting Speed – vc m/min		Cutting Speed – vc m/min		mm		10,0	12,0	16,0	20,0	25,0	32,0				
	min	max	min	max	min	max	min	max	mm	10,0	12,0	16,0	20,0	25,0	32,0						
P	0	1,5 x D	0,5 x D	1 x D	150	–	200	135	–	180	135	–	180	fz	0,061	0,070	0,086	0,097	0,105	0,106	
	1	1,5 x D	0,5 x D	1 x D	150	–	200	135	–	180	135	–	180	fz	0,061	0,070	0,086	0,097	0,105	0,106	
	2	1,5 x D	0,5 x D	1 x D	140	–	190	126	–	171	126	–	171	fz	0,061	0,070	0,086	0,097	0,105	0,106	
	3	1,5 x D	0,5 x D	1 x D	120	–	160	108	–	144	108	–	144	fz	0,051	0,060	0,074	0,086	0,097	0,105	
	4	1,5 x D	0,4 x D	0,75 x D	90	–	150	81	–	135	81	–	135	fz	0,046	0,053	0,065	0,075	0,083	0,087	
	5	1,5 x D	0,4 x D	1 x D	60	–	100	51	–	85	48	–	80	fz	0,041	0,048	0,059	0,069	0,077	0,084	
M	1	1,5 x D	0,4 x D	1 x D	90	–	115	72	–	92	63	–	80,5	fz	0,051	0,060	0,074	0,086	0,097	0,105	
	2	1,5 x D	0,4 x D	1 x D	60	–	80	48	–	64	42	–	56	fz	0,041	0,048	0,059	0,069	0,077	0,084	
	3	1,5 x D	0,4 x D	1 x D	60	–	70	48	–	56	42	–	49	fz	0,034	0,040	0,048	0,055	0,060	0,062	
S	1	1,5 x D	0,3 x D	0,3 x D	50	–	90	40	–	72	30	–	54	fz	0,051	0,060	0,074	0,086	0,097	0,105	
	2	1,5 x D	0,3 x D	0,3 x D	25	–	40	20	–	32	15	–	24	fz	0,027	0,032	0,039	0,046	0,052	0,057	
	3	1,5 x D	0,3 x D	0,3 x D	25	–	40	20	–	32	15	–	24	fz	0,027	0,032	0,039	0,046	0,052	0,057	
	4	1,5 x D	0,4 x D	1 x D	50	–	60	40	–	48	30	–	36	fz	0,038	0,044	0,055	0,063	0,071	0,077	

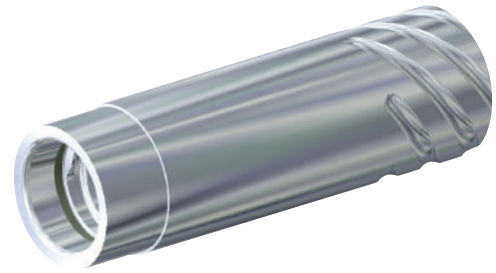
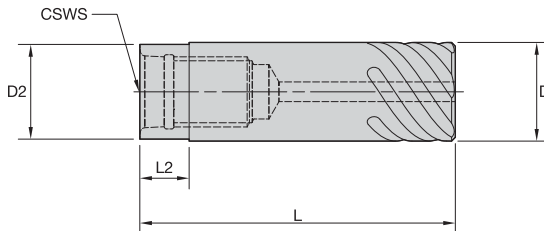
NOTE: Those guidelines may require variations to achieve optimum results.
 Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. Please adjust parameters according to system stability.
 For side milling with ap larger than 1 x D, reduce fz by 20%!
 Cylindrical shanks not recommended for full slotting.

■ HARVI • ULDV • Asymmetrical Flute Spacing

Material Group																						
	Side Milling (A) and Slotting (B)			short			medium			long			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.									
	A		B	adaptor reach									D1 – Diameter									
				KCSM15			KCSM15			KCSM15												
				Cutting Speed – vc m/min			Cutting Speed – vc m/min			Cutting Speed – vc m/min			mm	10,0	12,0	16,0	20,0	25,0	32,0			
ap	ae	ap	min		max	min		max	min		max	min		max	mm	10,0	12,0	16,0	20,0	25,0	32,0	
P	0	1,5 x D	0,5 x D	1 x D	150	-	200	135	-	180	135	-	180	fz	0,061	0,070	0,086	0,097	0,105	0,106		
	1	1,5 x D	0,5 x D	1 x D	150	-	200	135	-	180	135	-	180	fz	0,061	0,070	0,086	0,097	0,105	0,106		
	2	1,5 x D	0,5 x D	1 x D	140	-	190	126	-	171	126	-	171	fz	0,061	0,070	0,086	0,097	0,105	0,106		
	3	1,5 x D	0,5 x D	1 x D	120	-	160	108	-	144	108	-	144	fz	0,051	0,060	0,074	0,086	0,097	0,105		
	4	1,5 x D	0,4 x D	0,75 x D	90	-	150	81	-	135	81	-	135	fz	0,046	0,053	0,065	0,075	0,083	0,087		
	5	1,5 x D	0,4 x D	1 x D	60	-	100	51	-	85	48	-	80	fz	0,041	0,048	0,059	0,069	0,077	0,084		
M	1	1,5 x D	0,4 x D	1 x D	50	-	75	42,5	-	63,75	40	-	60	fz	0,034	0,040	0,048	0,055	0,060	0,062		
	2	1,5 x D	0,4 x D	1 x D	90	-	115	72	-	92	63	-	80,5	fz	0,051	0,060	0,074	0,086	0,097	0,105		
	3	1,5 x D	0,4 x D	1 x D	60	-	80	48	-	64	42	-	56	fz	0,041	0,048	0,059	0,069	0,077	0,084		
K	1	1,5 x D	0,5 x D	1 x D	60	-	70	48	-	56	42	-	49	fz	0,034	0,040	0,048	0,055	0,060	0,062		
	2	1,5 x D	0,5 x D	1 x D	120	-	150	108	-	135	108	-	135	fz	0,061	0,070	0,086	0,097	0,105	0,106		
	3	1,5 x D	0,5 x D	1 x D	110	-	140	99	-	126	99	-	126	fz	0,051	0,060	0,074	0,086	0,097	0,105		
S	1	1,5 x D	0,3 x D	0,3 x D	110	-	130	99	-	117	99	-	117	fz	0,041	0,048	0,059	0,069	0,077	0,084		
	2	1,5 x D	0,3 x D	0,3 x D	50	-	90	40	-	72	30	-	54	fz	0,051	0,060	0,074	0,086	0,097	0,105		
	3	1,5 x D	0,3 x D	0,3 x D	25	-	40	20	-	32	15	-	24	fz	0,027	0,032	0,039	0,046	0,052	0,057		
	4	1,5 x D	0,3 x D	0,3 x D	25	-	40	20	-	32	15	-	24	fz	0,027	0,032	0,039	0,046	0,052	0,057		
H	1	1,5 x D	0,4 x D	1 x D	50	-	60	40	-	48	30	-	36	fz	0,038	0,044	0,055	0,063	0,071	0,077		
	2	1,5 x D	0,4 x D	0,75 x D	80	-	140	64	-	112	48	-	84	fz	0,046	0,053	0,065	0,075	0,083	0,087		
	2	1,5 x D	0,2 x D	0,5 x D	70	-	120	56	-	96	42	-	72	fz	0,034	0,040	0,048	0,055	0,060	0,062		

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. Please adjust parameters according to system stability.
 For side milling with ap larger than 1 x D, reduce fz by 20%!
 Cylindrical shanks not recommended for full slotting.

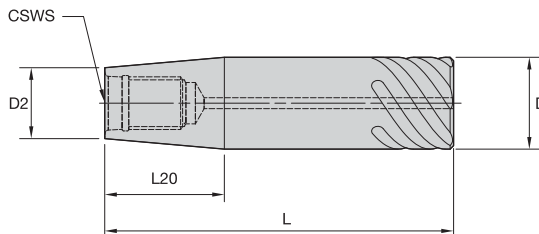




■ DL SS SL Cylindrical Metric

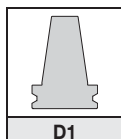
order number	catalogue number	CSWS system size	D	D2	L	L2	kg
6134889	SS10SLDL10055M	DL10	10	9,58	55	6	0,03
6135043	SS12SLDL12065M	DL12	12	11,50	65	7	0,05
6135049	SS16SLDL16070M	DL16	16	15,50	70	9	0,09
6135057	SS20SLDL20080M	DL20	20	19,30	80	11	0,16
6135063	SS25SLDL25090M	DL25	25	24,00	90	13	0,27
6135067	SS32SLDL32105M	DL32	32	31,00	105	17	0,52

NOTE: Cylindrical shanks not recommended for full slotting.



■ DL SS SL Conical Metric

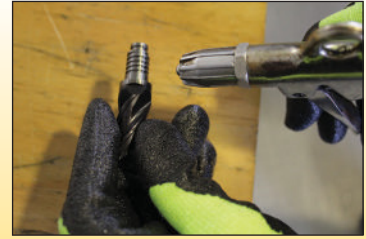
order number	catalogue number	CSWS system size	D	D2	L	L20	kg
6135041	SS12SLDL10065M	DL10	12	9,58	65	14	0,05
6135045	SS16SLDL10090M	DL10	16	9,58	90	37	0,11
6135051	SS20SLDL10115M	DL10	20	9,58	115	59	0,21
6135047	SS16SLDL12080M	DL12	16	11,50	80	26	0,11
6135053	SS20SLDL12105M	DL12	20	11,50	105	49	0,20
6135055	SS20SLDL16080M	DL16	20	15,50	80	26	0,16
6135059	SS25SLDL16115M	DL16	25	15,50	115	54	0,35
6135061	SS25SLDL20095M	DL20	25	19,30	95	33	0,30
6135065	SS32SLDL25105M	DL25	32	24,00	105	46	0,52
6135069	SS40SLDL32140M	DL32	40	31,00	140	51	1,13
6135081	SS50SLDL32200M	DL32	50	31,00	200	109	2,35



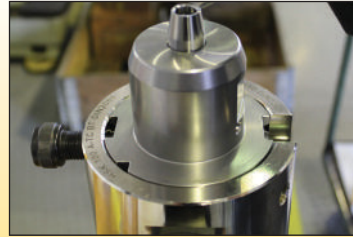
Assembly

Please wear sufficient personal safety equipment such as gloves and eye protection during assembly.

- 1** Clean the Duo-Lock™ cutting insert and shank coupling.

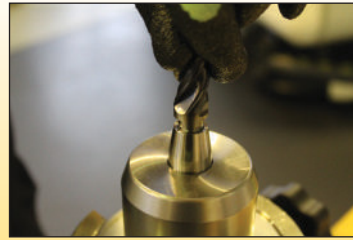


- 2** Mount the Duo-Lock™ adaptor in a mounting block with a clamping chuck sufficient to enable torque transmission.

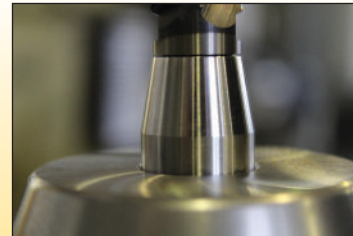


- 3** Screw the Duo-Lock™ cutting tip into adaptor by hand.

Attention: Use of protective gloves is mandatory!



- 4** A gap of approx. 0,15–0,3mm should be visible.



- 5** Apply the torque shown in the table. Use of a high quality common torque wrench is mandatory. The ERICKSON™ Torque Master wrench is recommended.



Duo-Lock™ Size	Torque Nm
DL 10	20
DL 12	30
DL 16	60
DL 20	80
DL 25	100
DL 32	130



HARVI™ I TE

High-Performance Solid End Milling



Materials



Applications



Slotting



Helical Interpolation



Side Milling/
Shoulder Milling



Plunge Milling



Ramping



Trochoidal Milling

kennametal.com/HARVI1TE

Proprietary end face design — Twisted cutting edge increases corner stability, enabling soft cutting action even at highest ramping angles.

Proprietary core design — Increases tool stability.

Innovative end face design — Asymmetrical divided flutes and variable helix, enabling vibration dampening and unmatched feed rates.

Proprietary relief — With AVF technology. A precision-faceted eccentric relief reduces vibrations and friction. For excellent cutting conditions in multiple materials.

Proprietary flute design — Innovative chip gashes within the flutes reduce cutting forces and supports efficient chip evacuation.



Twisted end face.

Asymmetrical divided flutes and variable helix.

Faceted eccentric relief with AVF-technology.

Chip gashes within the flutes.

NEW!

Sharp edge, necked version available.

NEW!

Short versions with sharp edge and chamfer available.



TURNING

FIRST CHOICE



MILLING

FIRST CHOICE



HOLEMAKING

FIRST CHOICE



TOOLING SYSTEMS

FIRST CHOICE

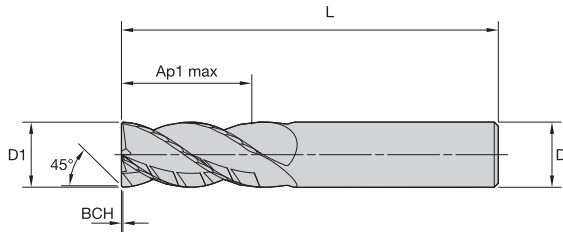
HARVI™ I TE — Innovative proprietary design features driving maximum productivity.

Universal character. Machines steel, stainless steel, cast iron, and high-temperature alloys with exceptional feed rates, reaching unmatched metal removal rates.

Applicable for a variety of operations, including dynamic milling and extreme ramping operations.

4-fluted end mill for high-performance roughing and finishing with only one tool.

HARVI I TE — Maximum metal removal. Maximum productivity. Maximum benefit.



P	<input checked="" type="checkbox"/>	•
M	<input checked="" type="checkbox"/>	•
K	<input checked="" type="checkbox"/>	•
N	<input checked="" type="checkbox"/>	•
S	<input type="checkbox"/>	○
H	<input type="checkbox"/>	○

• first choice
○ alternate choice

■ HARVI I TE • Chamfered • 4 Flutes • Plain Shank • Metric

order number	catalogue number	D1	D	Ap1 max	L	BCH	KCPM15
6675697	H1TE4CH0400R012HAM	4,00	6,00	12,00	55,00	0,40	6675697
6675698	H1TE4CH0500R013HAM	5,00	6,00	13,00	57,00	0,40	6675698
6675699	H1TE4CH0600R013HAM	6,00	6,00	13,00	57,00	0,40	6675699
6675700	H1TE4CH0800R016HAM	8,00	8,00	16,00	63,00	0,40	6675700
6675742	H1TE4CH1000R022HAM	10,00	10,00	22,00	72,00	0,50	6675742
6675743	H1TE4CH1200R026HAM	12,00	12,00	26,00	83,00	0,50	6675743
6675745	H1TE4CH1600R032HAM	16,00	16,00	32,00	92,00	0,50	6675745
6675746	H1TE4CH1800R032HAM	18,00	18,00	32,00	92,00	0,50	6675746
6675747	H1TE4CH2000R038HAM	20,00	20,00	38,00	104,00	0,50	6675747
6675748	H1TE4CH2500R045HAM	25,00	25,00	45,00	121,00	0,50	6675748

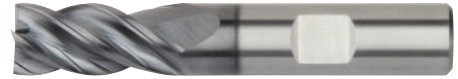
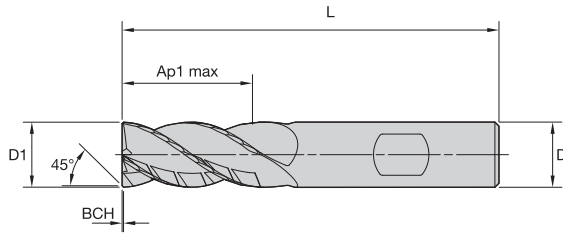
TURNING

MILLING

HOLEMAKING

TOOLING SYSTEMS





● first choice
 ○ alternate choice

P	●
M	●
K	●
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S	○
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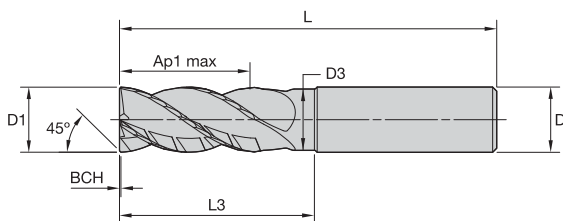
■ HARVI I TE • Chamfered • 4 Flutes • Weldon Shank • Metric

order number	catalogue number	D1	D	Ap1 max	L	BCH	KCPM15
6675749	H1TE4CH0400R012HBM	4,00	6,00	12,00	55,00	0,40	6675749
6675750	H1TE4CH0500R013HBM	5,00	6,00	13,00	57,00	0,40	6675750
6675751	H1TE4CH0600R013HBM	6,00	6,00	13,00	57,00	0,40	6675751
6675752	H1TE4CH0800R016HBM	8,00	8,00	16,00	63,00	0,40	6675752
6675753	H1TE4CH1000R022HBM	10,00	10,00	22,00	72,00	0,50	6675753
6675754	H1TE4CH1200R026HBM	12,00	12,00	26,00	83,00	0,50	6675754
6675756	H1TE4CH1600R032HBM	16,00	16,00	32,00	92,00	0,50	6675756
6675757	H1TE4CH1800R032HBM	18,00	18,00	32,00	92,00	0,50	6675757
6675758	H1TE4CH2000R038HBM	20,00	20,00	38,00	104,00	0,50	6675758
6687137	H1TE4CH2500R045HBM	25,00	25,00	45,00	121,00	0,50	6687137



Solid Carbide End Mills

HARVI™ I TE • Chamfered • 4 Flutes • Necked • Plain Shank

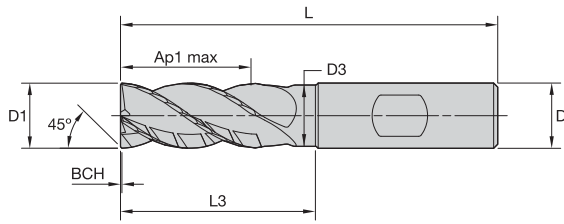


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H	<input type="checkbox"/>	○

• first choice
○ alternate choice

■ HARVI I TE • Chamfered • 4 Flutes • Necked • Plain Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L	BCH	KCPM15
6676308	H1TE4CH0400N011HAM	4,00	6,00	3,76	11,00	57,00	0,15	6676308
6676310	H1TE4CH0500N013HAM	5,00	6,00	4,70	13,00	57,00	0,15	6676310
6676332	H1TE4CH0600N013HAM	6,00	6,00	5,64	13,00	57,00	0,15	6676332
6676334	H1TE4CH0800N016HAM	8,00	8,00	7,52	16,00	63,00	0,20	6676334
6676336	H1TE4CH1000N022HAM	10,00	10,00	9,40	22,00	72,00	0,20	6676336
6676338	H1TE4CH1200N026HAM	12,00	12,00	11,28	26,00	83,00	0,20	6676338
6676342	H1TE4CH1600N032HAM	16,00	16,00	15,04	32,00	92,00	0,35	6676342
6676344	H1TE4CH2000N038HAM	20,00	20,00	18,80	38,00	104,00	0,35	6676344
6676346	H1TE4CH2500N045HAM	25,00	25,00	24,00	45,00	121,00	0,35	6676346



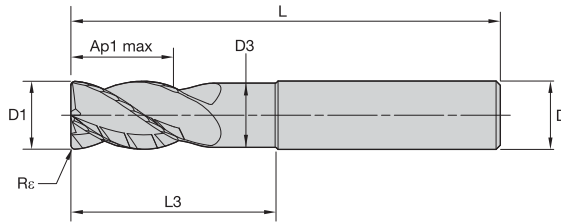
● first choice
○ alternate choice

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■ HARVI I TE • Chamfered • 4 Flutes • Necked • Weldon Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L	BCH	KCPM15
6676309	H1TE4CH0400N011HBM	4,00	6,00	3,76	11,00	57,00	0,15	6676309
6676331	H1TE4CH0500N013HBM	5,00	6,00	4,70	13,00	57,00	0,15	6676331
6676333	H1TE4CH0600N013HBM	6,00	6,00	5,64	13,00	57,00	0,15	6676333
6676335	H1TE4CH0800N016HBM	8,00	8,00	7,52	16,00	63,00	0,20	6676335
6676337	H1TE4CH1000N022HBM	10,00	10,00	9,40	22,00	72,00	0,20	6676337
6676339	H1TE4CH1200N026HBM	12,00	12,00	11,28	26,00	83,00	0,20	6676339
6676343	H1TE4CH1600N032HBM	16,00	16,00	15,04	32,00	92,00	0,35	6676343
6676345	H1TE4CH2000N038HBM	20,00	20,00	18,80	38,00	104,00	0,35	6676345
6676347	H1TE4CH2500N045HBM	25,00	25,00	24,00	45,00	121,00	0,35	6676347



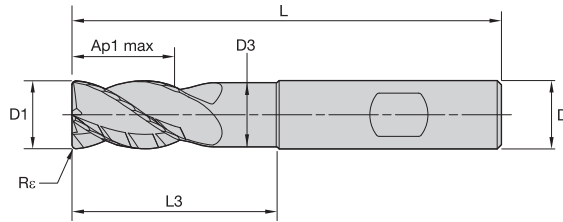
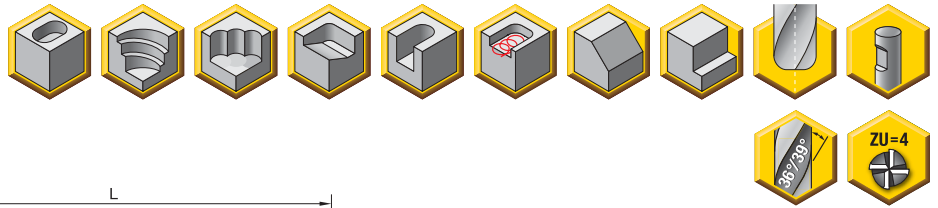


● first choice
○ alternate choice

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■ HARVI I TE • Radiused • 4 Flutes • Necked • Plain Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L3	L	Rε	KCSM15
6676190	H1TE4RA0600N009HAR050M	6,00	6,00	5,64	9,00	18,00	63,00	0,50	6676190
6676231	H1TE4RA0600N009HAR100M	6,00	6,00	5,64	9,00	18,00	63,00	1,00	6676231
6676234	H1TE4RA0800N012HAR050M	8,00	8,00	7,52	12,00	24,00	68,00	0,50	6676234
6676235	H1TE4RA0800N012HAR100M	8,00	8,00	7,52	12,00	24,00	68,00	1,00	6676235
6676238	H1TE4RA1000N015HAR050M	10,00	10,00	9,40	15,00	30,00	76,00	0,50	6676238
6676239	H1TE4RA1000N015HAR100M	10,00	10,00	9,40	15,00	30,00	76,00	1,00	6676239
6676240	H1TE4RA1000N015HAR200M	10,00	10,00	9,40	15,00	30,00	76,00	2,00	6676240
6676251	H1TE4RA1000N015HAR300M	10,00	10,00	9,40	15,00	30,00	76,00	3,00	6676251
6676257	H1TE4RA1200N018HAR050M	12,00	12,00	11,28	18,00	36,00	83,00	0,50	6676257
6676258	H1TE4RA1200N018HAR100M	12,00	12,00	11,28	18,00	36,00	83,00	1,00	6676258
6676259	H1TE4RA1200N018HAR200M	12,00	12,00	11,28	18,00	36,00	83,00	2,00	6676259
6676260	H1TE4RA1200N018HAR300M	12,00	12,00	11,28	18,00	36,00	83,00	3,00	6676260
6676271	H1TE4RA1200N018HAR400M	12,00	12,00	11,28	18,00	36,00	83,00	4,00	6676271
6676277	H1TE4RA1600N024HAR050M	16,00	16,00	15,04	24,00	48,00	100,00	0,50	6676277
6676278	H1TE4RA1600N024HAR100M	16,00	16,00	15,04	24,00	48,00	100,00	1,00	6676278
6676279	H1TE4RA1600N024HAR200M	16,00	16,00	15,04	24,00	48,00	100,00	2,00	6676279
6676280	H1TE4RA1600N024HAR300M	16,00	16,00	15,04	24,00	48,00	100,00	3,00	6676280
6676281	H1TE4RA1600N024HAR400M	16,00	16,00	15,04	24,00	48,00	100,00	4,00	6676281
6676282	H1TE4RA1600N024HAR600M	16,00	16,00	15,04	24,00	48,00	100,00	6,00	6676282
6676289	H1TE4RA2000N030HAR050M	20,00	20,00	18,80	30,00	60,00	115,00	0,50	6676289
6676290	H1TE4RA2000N030HAR100M	20,00	20,00	18,80	30,00	60,00	115,00	1,00	6676290
6676291	H1TE4RA2000N030HAR200M	20,00	20,00	18,80	30,00	60,00	115,00	2,00	6676291
6676292	H1TE4RA2000N030HAR300M	20,00	20,00	18,80	30,00	60,00	115,00	3,00	6676292
6676293	H1TE4RA2000N030HAR400M	20,00	20,00	18,80	30,00	60,00	115,00	4,00	6676293
6676294	H1TE4RA2000N030HAR600M	20,00	20,00	18,80	30,00	60,00	115,00	6,00	6676294
6676299	H1TE4RA2500N038HAR050M	25,00	25,00	24,00	37,50	75,00	135,00	0,50	6676299
6676300	H1TE4RA2500N038HAR100M	25,00	25,00	24,00	37,50	75,00	135,00	1,00	6676300
6676301	H1TE4RA2500N038HAR200M	25,00	25,00	24,00	37,50	75,00	135,00	2,00	6676301
6676302	H1TE4RA2500N038HAR300M	25,00	25,00	24,00	37,50	75,00	135,00	3,00	6676302
6676303	H1TE4RA2500N038HAR400M	25,00	25,00	24,00	37,50	75,00	135,00	4,00	6676303
6676304	H1TE4RA2500N038HAR600M	25,00	25,00	24,00	37,50	75,00	135,00	6,00	6676304



● first choice
○ alternate choice

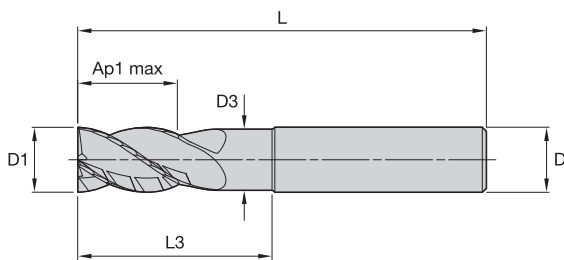
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■ HARVI I TE • Radiused • 4 Flutes • Necked • Weldon Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L3	L	Rε	KCSM15
6676232	H1TE4RA0600N009HBR050M	6,00	6,00	5,64	9,00	18,00	63,00	0,50	6676232
6676233	H1TE4RA0600N009HBR100M	6,00	6,00	5,64	9,00	18,00	63,00	1,00	6676233
6676236	H1TE4RA0800N012HBR050M	8,00	8,00	7,52	12,00	24,00	68,00	0,50	6676236
6676237	H1TE4RA0800N012HBR100M	8,00	8,00	7,52	12,00	24,00	68,00	1,00	6676237
6676253	H1TE4RA1000N015HBR050M	10,00	10,00	9,40	15,00	30,00	76,00	0,50	6676253
6676254	H1TE4RA1000N015HBR100M	10,00	10,00	9,40	15,00	30,00	76,00	1,00	6676254
6676255	H1TE4RA1000N015HBR200M	10,00	10,00	9,40	15,00	30,00	76,00	2,00	6676255
6676256	H1TE4RA1000N015HBR300M	10,00	10,00	9,40	15,00	30,00	76,00	3,00	6676256
6676272	H1TE4RA1200N018HBR050M	12,00	12,00	11,28	18,00	36,00	83,00	0,50	6676272
6676273	H1TE4RA1200N018HBR100M	12,00	12,00	11,28	18,00	36,00	83,00	1,00	6676273
6676274	H1TE4RA1200N018HBR200M	12,00	12,00	11,28	18,00	36,00	83,00	2,00	6676274
6676275	H1TE4RA1200N018HBR300M	12,00	12,00	11,28	18,00	36,00	83,00	3,00	6676275
6676276	H1TE4RA1200N018HBR400M	12,00	12,00	11,28	18,00	36,00	83,00	4,00	6676276
6676283	H1TE4RA1600N024HBR050M	16,00	16,00	15,04	24,00	48,00	100,00	0,50	6676283
6676284	H1TE4RA1600N024HBR100M	16,00	16,00	15,04	24,00	48,00	100,00	1,00	6676284
6676285	H1TE4RA1600N024HBR200M	16,00	16,00	15,04	24,00	48,00	100,00	2,00	6676285
6676286	H1TE4RA1600N024HBR300M	16,00	16,00	15,04	24,00	48,00	100,00	3,00	6676286
6676287	H1TE4RA1600N024HBR400M	16,00	16,00	15,04	24,00	48,00	100,00	4,00	6676287
6676288	H1TE4RA1600N024HBR600M	16,00	16,00	15,04	24,00	48,00	100,00	6,00	6676288
6676295	H1TE4RA2000N030HBR050M	20,00	20,00	18,80	30,00	60,00	115,00	0,50	6676295
6676296	H1TE4RA2000N030HBR100M	20,00	20,00	18,80	30,00	60,00	115,00	1,00	6676296
6676297	H1TE4RA2000N030HBR200M	20,00	20,00	18,80	30,00	60,00	115,00	2,00	6676297
6676298	H1TE4RA2000N030HBR300M	20,00	20,00	18,80	30,00	60,00	115,00	3,00	6676298
6687140	H1TE4RA2000N030HBR400M	20,00	20,00	18,80	30,00	60,00	115,00	4,00	6687140
6687151	H1TE4RA2000N030HBR600M	20,00	20,00	18,80	30,00	60,00	115,00	6,00	6687151
6676305	H1TE4RA2500N038HBR050M	25,00	25,00	24,00	37,50	75,00	135,00	0,50	6676305
6687152	H1TE4RA2500N038HBR100M	25,00	25,00	24,00	37,50	75,00	135,00	1,00	6687152
6687153	H1TE4RA2500N038HBR200M	25,00	25,00	24,00	37,50	75,00	135,00	2,00	6687153
6687154	H1TE4RA2500N038HBR300M	25,00	25,00	24,00	37,50	75,00	135,00	3,00	6687154
6676306	H1TE4RA2500N038HBR400M	25,00	25,00	24,00	37,50	75,00	135,00	4,00	6676306
6676307	H1TE4RA2500N038HBR600M	25,00	25,00	24,00	37,50	75,00	135,00	6,00	6676307

Solid Carbide End Mills

HARVI™ I TE • Square End • 4 Flutes • Necked • Plain Shank



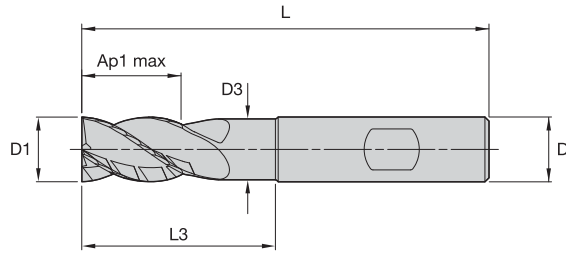
● first choice
○ alternate choice

P	●
M	●
K	●
N	○
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H	○

■ HARVI I TE • Square End • 4 Flutes • Necked • Plain Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L3	L	KCPM15
6769547	H1TE4SE0400N011HAM	4,00	6,00	3,76	11,00	16,00	57,00	6769547
6769548	H1TE4SE0500N013HAM	5,00	6,00	4,70	13,00	18,00	57,00	6769548
6769549	H1TE4SE0600N013HAM	6,00	6,00	5,64	13,00	18,00	57,00	6769549
6769563	H1TE4SE0800N016HAM	8,00	8,00	7,52	16,00	24,00	63,00	6769563
6769564	H1TE4SE1000N022HAM	10,00	10,00	9,40	22,00	30,00	72,00	6769564
6769565	H1TE4SE1200N026HAM	12,00	12,00	11,28	26,00	36,00	83,00	6769565
6769566	H1TE4SE1400N026HAM	14,00	14,00	13,16	26,00	42,00	83,00	6769566
6769567	H1TE4SE1600N032HAM	16,00	16,00	15,04	32,00	48,00	92,00	6769567
6769568	H1TE4SE1800N035HAM	18,00	18,00	16,92	35,00	54,00	92,00	6769568
6769569	H1TE4SE2000N038HAM	20,00	20,00	18,80	38,00	60,00	104,00	6769569
6769581	H1TE4SE2500N045HAM	25,00	25,00	24,00	45,00	75,00	121,00	6769581





- first choice
- alternate choice

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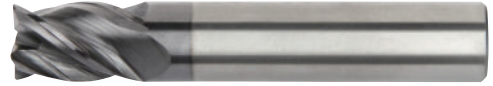
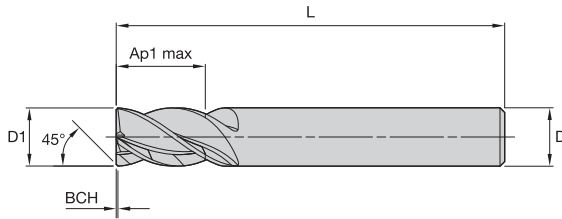
■ HARVI I TE • Square End • 4 Flutes • Necked • Weldon Shank • Metric

order number	catalogue number	D1	D	D3	Ap1 max	L3	L	KCPM15
6769586	H1TE4SE0400N011HBM	4,00	6,00	3,76	11,00	16,00	57,00	6769586
6769587	H1TE4SE0500N013HBM	5,00	6,00	4,70	13,00	18,00	57,00	6769587
6769588	H1TE4SE0600N013HBM	6,00	6,00	5,64	13,00	18,00	57,00	6769588
6769589	H1TE4SE0800N016HBM	8,00	8,00	7,52	16,00	24,00	63,00	6769589
6769590	H1TE4SE1000N022HBM	10,00	10,00	9,40	22,00	30,00	72,00	6769590
6769591	H1TE4SE1200N026HBM	12,00	12,00	11,28	26,00	36,00	83,00	6769591
6769592	H1TE4SE1400N026HBM	14,00	14,00	13,16	26,00	42,00	83,00	6769592
6769593	H1TE4SE1600N032HBM	16,00	16,00	15,04	32,00	48,00	92,00	6769593
6769594	H1TE4SE1800N035HBM	18,00	18,00	16,92	35,00	54,00	92,00	6769594
6769595	H1TE4SE2000N038HBM	20,00	20,00	18,80	38,00	60,00	104,00	6769595
6769596	H1TE4SE2500N045HBM	25,00	25,00	24,00	45,00	75,00	121,00	6769596



Solid Carbide End Mills

HARVI™ I TE • Chamfered • 4 Flutes • Short • Plain Shank

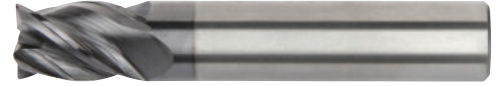
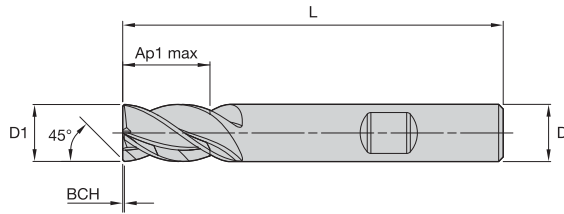


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• first choice
○ alternate choice

■ HARVI I TE • Chamfered • 4 Flutes • Short • Plain Shank • Metric

order number	catalogue number	D1	D	Ap1 max	L	BCH	KCPM15
6769611	H1TE4CH0400S008HAM	4,00	6,00	8,00	54,00	0,15	6769611
6769613	H1TE4CH0500S009HAM	5,00	6,00	9,00	54,00	0,15	6769613
6769614	H1TE4CH0600S010HAM	6,00	6,00	10,00	54,00	0,15	6769614
6769615	H1TE4CH0800S012HAM	8,00	8,00	12,00	58,00	0,20	6769615
6769616	H1TE4CH1000S014HAM	10,00	10,00	14,00	66,00	0,25	6769616
6769617	H1TE4CH1200S016HAM	12,00	12,00	16,00	73,00	0,25	6769617
6769619	H1TE4CH1400S018HAM	14,00	14,00	18,00	75,00	0,25	6769619
6769620	H1TE4CH1600S022HAM	16,00	16,00	22,00	82,00	0,35	6769620
6769621	H1TE4CH1800S024HAM	18,00	18,00	24,00	92,00	0,35	6769621
6769622	H1TE4CH2000S026HAM	20,00	20,00	26,00	92,00	0,35	6769622
6769623	H1TE4CH2500S030HAM	25,00	25,00	30,00	121,00	0,35	6769623



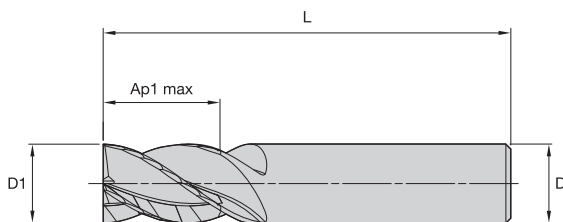
● first choice
○ alternate choice

P	●
M	●
K	●
N	○
S	○
H	○

■ HARVI I TE • Chamfered • 4 Flutes • Short • Weldon Shank • Metric

order number	catalogue number	D1	D	Ap1 max	L	BCH	KCPM15
6769629	H1TE4CH0400S008HBM	4,00	6,00	8,00	54,00	0,15	6769629
6769630	H1TE4CH0500S009HBM	5,00	6,00	9,00	54,00	0,15	6769630
6769631	H1TE4CH0600S010HBM	6,00	6,00	10,00	54,00	0,15	6769631
6769632	H1TE4CH0800S012HBM	8,00	8,00	12,00	58,00	0,20	6769632
6769633	H1TE4CH1000S014HBM	10,00	10,00	14,00	66,00	0,25	6769633
6769634	H1TE4CH1200S016HBM	12,00	12,00	16,00	73,00	0,25	6769634
6769635	H1TE4CH1400S018HBM	14,00	14,00	18,00	75,00	0,25	6769635
6769636	H1TE4CH1600S022HBM	16,00	16,00	22,00	82,00	0,35	6769636
6769637	H1TE4CH1800S024HBM	18,00	18,00	24,00	92,00	0,35	6769637
6769638	H1TE4CH2000S026HBM	20,00	20,00	26,00	92,00	0,35	6769638
6769639	H1TE4CH2500S030HBM	25,00	25,00	30,00	121,00	0,35	6769639





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M	<input checked="" type="checkbox"/>	•
K	<input checked="" type="checkbox"/>	•
N	<input checked="" type="checkbox"/>	•
S	<input type="checkbox"/>	○
H	<input type="checkbox"/>	○

• first choice
○ alternate choice

■ HARVI I TE • Square End • 4 Flutes • Short • Plain Shank • Metric

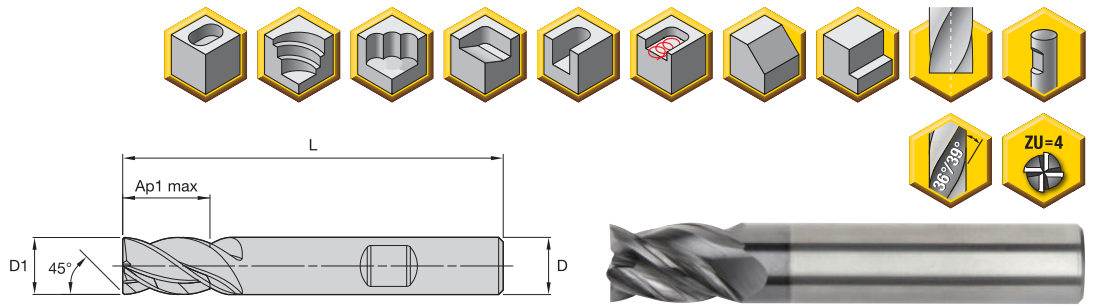
order number	catalogue number	D1	D	Ap1 max	L	KCPM15
6769682	H1TE4SE0400S008HAM	4,00	6,00	8,00	54,00	6769682
6769683	H1TE4SE0500S009HAM	5,00	6,00	9,00	54,00	6769683
6769684	H1TE4SE0600S010HAM	6,00	6,00	10,00	54,00	6769684
6769685	H1TE4SE0800S012HAM	8,00	8,00	12,00	58,00	6769685
6769686	H1TE4SE1000S014HAM	10,00	10,00	14,00	66,00	6769686
6769687	H1TE4SE1200S016HAM	12,00	12,00	16,00	73,00	6769687
6769688	H1TE4SE1400S018HAM	14,00	14,00	18,00	75,00	6769688
6769689	H1TE4SE1600S022HAM	16,00	16,00	22,00	82,00	6769689
6769690	H1TE4SE1800S024HAM	18,00	18,00	24,00	92,00	6769690
6769701	H1TE4SE2000S026HAM	20,00	20,00	26,00	92,00	6769701
6769702	H1TE4SE2500S030HAM	25,00	25,00	30,00	121,00	6769702

TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE



P	<input checked="" type="checkbox"/>	•
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K	<input checked="" type="checkbox"/>	•
N	<input checked="" type="checkbox"/>	•
S	<input type="checkbox"/>	○
H	<input type="checkbox"/>	○

• first choice
 ○ alternate choice

■ HARVI I TE • Square End • 4 Flutes • Short • Weldon Shank • Metric

order number	catalogue number	D1	D	Ap1 max	L	KCPM15
6769709	H1TE4SE0400S008HBM	4,00	6,00	8,00	54,00	6769709
6769710	H1TE4SE0500S009HBM	5,00	6,00	9,00	54,00	6769710
6769711	H1TE4SE0600S010HBM	6,00	6,00	10,00	54,00	6769711
6769712	H1TE4SE0800S012HBM	8,00	8,00	12,00	58,00	6769712
6769713	H1TE4SE1000S014HBM	10,00	10,00	14,00	66,00	6769713
6769714	H1TE4SE1200S016HBM	12,00	12,00	16,00	73,00	6769714
6769715	H1TE4SE1400S018HBM	14,00	14,00	18,00	75,00	6769715
6769716	H1TE4SE1600S022HBM	16,00	16,00	22,00	82,00	6769716
6769717	H1TE4SE1800S024HBM	18,00	18,00	24,00	92,00	6769717
6769718	H1TE4SE2000S026HBM	20,00	20,00	26,00	92,00	6769718
6769719	H1TE4SE2500S030HBM	25,00	25,00	30,00	121,00	6769719



Material Group	Side Milling (A) and Slotting (B)			KCPM15-KCSM15			Recommended feed per tooth (fz = mm/z) for side milling (A). For slotting (B), reduce fz by 20%.												
	A		B	Cutting Speed – vc m/min			D1 – Diameter												
	ap	ae	ap	min	Start	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0	
P	0	1,5 x D1	0,5 x D1	1,25 x D1	150	175	200	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136
	1	1,5 x D1	0,5 x D1	1,25 x D1	150	175	200	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136
	2	1,5 x D1	0,5 x D1	1,25 x D1	140	165	190	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136
	3	1,5 x D1	0,5 x D1	1,25 x D1	120	140	160	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125
	4	1,5 x D1	0,5 x D1	1,25 x D1	90	120	150	fz	0,024	0,030	0,036	0,049	0,059	0,069	0,077	0,084	0,091	0,097	0,107
	5	1,5 x D1	0,5 x D1	1,25 x D1	60	80	100	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100
M	1	1,5 x D1	0,5 x D1	1,25 x D1	90	100	115	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125
	2	1,5 x D1	0,5 x D1	1,25 x D1	60	70	80	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100
	3	1,5 x D1	0,5 x D1	1,0 x D1	60	65	70	fz	0,018	0,022	0,027	0,037	0,044	0,051	0,057	0,063	0,067	0,071	0,078
K	1	1,5 x D1	0,5 x D1	1,0 x D1	120	135	150	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136
	2	1,5 x D1	0,5 x D1	1,0 x D1	110	125	140	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125
	3	1,5 x D1	0,5 x D1	1,0 x D1	110	120	130	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100
S	1	1,5 x D1	0,5 x D1	0,75 x D1	50	70	90	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125
	2	1,5 x D1	0,5 x D1	0,75 x D1	50	65	80	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100
	3	1,5 x D1	0,5 x D1	0,5 x D1	25	30	40	fz	0,014	0,018	0,021	0,029	0,035	0,041	0,046	0,051	0,055	0,059	0,067
	4	1,5 x D1	0,5 x D1	1,25 x D1	50	55	60	fz	0,017	0,023	0,028	0,040	0,049	0,057	0,064	0,071	0,076	0,082	0,092
H	1	1,5 x D1	0,5 x D1	1,0 x D1	80	110	140	fz	0,024	0,030	0,036	0,049	0,059	0,069	0,077	0,084	0,091	0,097	0,107
	2	1,5 x D1	0,5 x D1	1,0 x D1	70	90	120	fz	0,018	0,022	0,027	0,037	0,044	0,051	0,057	0,063	0,067	0,071	0,078

■ HARVI I TE • 4 Flutes • Adjustment factor for feed and speed calculation

To calculate application specific cutting data, please use KV coefficient table to the right for adaptation of cutting speed and KFz for feed respectively.

Vc new = Vc * Kv
Fz new = IPT * KFz

Calculation example:

Application: D = 20mm; M2 material group;
Ae = 2mm

Cutting data recommendation: Vc = 80 m/min;
fz = 0,089mm/th

Adjustment coefficients: Ae = 2mm equals 10,0%;
Kv = 1,35; KFz = 1,7

Final cutting data recommendation:

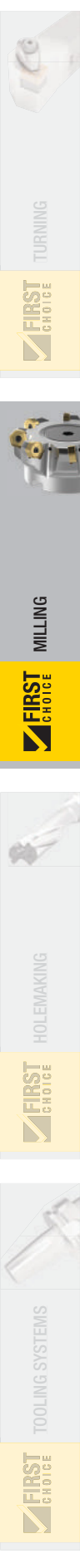
Vc new = 80 * 1,35 = 108 m/min
Fz new = 0,089 * 1,7 = 0,15mm/th

	Ae/D	0,50%	1,00%	1,60%	2,00%	4,00%	5,00%	8,00%	10,00%	20,00%	30,00%	40,00%	50,00%
Speed factor	Kv	2,9	2,85	2,8	2	1,5	1,45	1,4	1,35	1,25	1,2	1	1
Feed factor	KFz	2,8	2,6	2,5	2,4	2,3	2,2	2	1,7	1,25	1,02	1	1



Material Group	Max Depth	Helical Interpolation/Ramping			Recommended feed per tooth (fz = mm/z) for Helical Interpolation and Ramping – fz x 2													
		KCPM15-KCSM15			Diameter – D1 [Ømin–Ømax] for helical interpolation													
		Cutting Speed – vc m/min																
		min	Start	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0		
			mm	4,6–7,6	5,8–9,5	6,9–11,4	9,2–15,2	11,5–19,0	13,8–22,8	16,1–26,6	18,4–30,4	20,7–34,2	23,0–38,0	28,8–47,5				
P	0	1,25 x D1	150	175	200	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136	
	1	1,25 x D1	150	175	200	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136	
	2	1,25 x D1	140	165	190	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136	
	3	1,25 x D1	120	140	160	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125	
	4	1,25 x D1	90	120	150	fz	0,024	0,030	0,036	0,049	0,059	0,069	0,077	0,084	0,091	0,097	0,107	
	5	1,25 x D1	60	80	100	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100	
M	1	1,25 x D1	90	100	115	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125	
	2	1,25 x D1	60	70	80	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100	
	3	1,0 x D1	60	65	70	fz	0,018	0,022	0,027	0,037	0,044	0,051	0,057	0,063	0,067	0,071	0,078	
K	1	1,0 x D1	120	135	150	fz	0,031	0,040	0,048	0,066	0,079	0,091	0,102	0,111	0,119	0,125	0,136	
	2	1,0 x D1	110	125	140	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125	
	3	1,0 x D1	110	120	130	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100	
S	1	0,75 x D1	50	70	90	fz	0,026	0,033	0,040	0,055	0,067	0,077	0,087	0,096	0,104	0,111	0,125	
	2	0,75 x D1	50	65	80	fz	0,021	0,027	0,032	0,044	0,053	0,062	0,070	0,077	0,083	0,089	0,100	
	3	0,5 x D1	25	30	40	fz	0,014	0,018	0,021	0,029	0,035	0,041	0,046	0,051	0,055	0,059	0,067	
	4	1,25 x D1	50	55	60	fz	0,017	0,023	0,028	0,040	0,049	0,057	0,064	0,071	0,076	0,082	0,092	
H	1	1,0 x D1	80	110	140	fz	0,024	0,030	0,036	0,049	0,059	0,069	0,077	0,084	0,091	0,097	0,107	
	2	1,0 x D1	70	90	120	fz	0,018	0,022	0,027	0,037	0,044	0,051	0,057	0,063	0,067	0,071	0,078	

Material Group	Max Depth	Helical Interpolation/Ramping			Recommended feed per tooth (fz = mm/z) for Helical Interpolation and Ramping – fz x 2													
		KCPM15-KCSM15			Diameter – D1 [Ømin–Ømax] for helical interpolation													
		Cutting Speed – vc m/min																
		min	Start	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0		
			mm	4,6–7,6	5,8–9,5	6,9–11,4	9,2–15,2	11,5–19,0	13,8–22,8	16,1–26,6	18,4–30,4	20,7–34,2	23,0–38,0	28,8–47,5				
P	0	1,25 x D1	150	165	175	fz	0,023	0,030	0,036	0,050	0,059	0,068	0,076	0,083	0,089	0,094	0,102	
	1	1,25 x D1	150	165	175	fz	0,023	0,030	0,036	0,050	0,059	0,068	0,076	0,083	0,089	0,094	0,102	
	2	1,25 x D1	140	155	165	fz	0,023	0,030	0,036	0,050	0,059	0,068	0,076	0,083	0,089	0,094	0,102	
	3	1,25 x D1	120	130	140	fz	0,019	0,025	0,030	0,041	0,050	0,058	0,065	0,072	0,078	0,083	0,094	
	4	1,25 x D1	90	105	120	fz	0,018	0,022	0,027	0,037	0,045	0,051	0,058	0,063	0,068	0,073	0,080	
	5	1,25 x D1	60	70	80	fz	0,016	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075	
M	1	1,25 x D1	90	95	100	fz	0,019	0,025	0,030	0,041	0,050	0,058	0,065	0,072	0,078	0,083	0,094	
	2	1,25 x D1	60	65	70	fz	0,016	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075	
	3	1,0 x D1	60	62	65	fz	0,013	0,017	0,020	0,028	0,033	0,038	0,043	0,047	0,050	0,053	0,059	
K	1	1,0 x D1	120	130	135	fz	0,023	0,030	0,036	0,050	0,059	0,068	0,076	0,083	0,089	0,094	0,102	
	2	1,0 x D1	110	120	125	fz	0,019	0,025	0,030	0,041	0,050	0,058	0,065	0,072	0,078	0,083	0,094	
	3	1,0 x D1	110	115	120	fz	0,016	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075	
S	1	0,75 x D1	50	60	70	fz	0,019	0,025	0,030	0,041	0,050	0,058	0,065	0,072	0,078	0,083	0,094	
	2	0,75 x D1	50	55	65	fz	0,016	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075	
	3	0,5 x D1	25	27	30	fz	0,010	0,013	0,016	0,022	0,026	0,031	0,035	0,038	0,042	0,045	0,051	
	4	1,25 x D1	50	52	55	fz	0,013	0,017	0,021	0,030	0,037	0,043	0,048	0,053	0,057	0,061	0,069	
H	1	1,0 x D1	80	95	110	fz	0,018	0,022	0,027	0,037	0,045	0,051	0,058	0,063	0,068	0,073	0,080	
	2	1,0 x D1	70	80	90	fz	0,013	0,017	0,020	0,028	0,033	0,038	0,043	0,047	0,050	0,053	0,059	

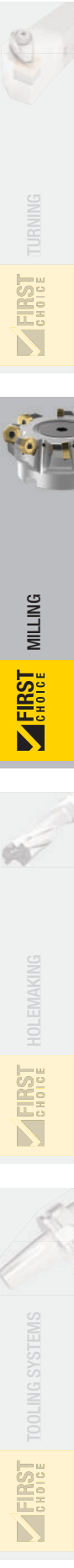


Material Group		Helical Interpolation/Ramping			Recommended feed per tooth (fz = mm/z) for Helical Interpolation and Ramping – fz x 2															
		30°–45°			Diameter – D1 [Ømin–Ømax] for helical interpolation															
		Max Depth	min	Start	max	Cutting Speed – vc m/min														
						mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0			
					mm	4,6–7,6	5,8–9,5	6,9–11,4	9,2–15,2	11,5–19,0	13,8–22,8	16,1–26,6	18,4–30,4	20,7–34,2	23,0–38,0	28,8–47,5				
P	0	1,25 x D1	140	150	165	fz	0,019	0,024	0,029	0,040	0,048	0,055	0,061	0,067	0,071	0,075	0,082			
	1	1,25 x D1	140	150	165	fz	0,019	0,024	0,029	0,040	0,048	0,055	0,061	0,067	0,071	0,075	0,082			
	2	1,25 x D1	140	150	165	fz	0,019	0,024	0,029	0,040	0,048	0,055	0,061	0,067	0,071	0,075	0,082			
	3	1,25 x D1	105	115	120	fz	0,015	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075			
	4	1,25 x D1	90	100	110	fz	0,014	0,018	0,022	0,030	0,036	0,041	0,046	0,051	0,055	0,058	0,064			
	5	1,25 x D1	70	75	80	fz	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,053	0,060			
M	1	1,25 x D1	75	85	90	fz	0,015	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075			
	2	1,25 x D1	50	55	60	fz	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,053	0,060			
	3	1,0 x D1	45	50	55	fz	0,011	0,013	0,016	0,022	0,027	0,031	0,034	0,038	0,040	0,043	0,047			
K	1	1,0 x D1	110	120	130	fz	0,019	0,024	0,029	0,040	0,048	0,055	0,061	0,067	0,071	0,075	0,082			
	2	1,0 x D1	100	110	120	fz	0,015	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075			
	3	1,0 x D1	90	100	110	fz	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,053	0,060			
S	1	0,75 x D1	80	85	90	fz	0,015	0,020	0,024	0,033	0,040	0,046	0,052	0,058	0,062	0,067	0,075			
	2	0,75 x D1	55	60	65	fz	0,013	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,053	0,060			
	3	0,5 x D1	20	25	28	fz	0,008	0,011	0,013	0,017	0,021	0,025	0,028	0,031	0,033	0,036	0,040			
	4	1,25 x D1	35	40	45	fz	0,010	0,014	0,017	0,024	0,029	0,034	0,038	0,042	0,046	0,049	0,055			
H	1	1,0 x D1	75	80	85	fz	0,014	0,018	0,022	0,030	0,036	0,041	0,046	0,051	0,055	0,058	0,064			
	2	1,0 x D1	65	70	75	fz	0,011	0,013	0,016	0,022	0,027	0,031	0,034	0,038	0,040	0,043	0,047			

Material Group		Plunging/Drilling			Recommended feed per revolution (fn =mm/rev) for Plunging and Drilling														
		Max Depth	Applicable	Coolant	Cutting Speed – vc m/min														
					D1 – Diameter														
		mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0						
P	0	1,5 x D	•	Preferred	140	150	165	fn	0,040	0,045	0,055	0,065	0,080	0,095	0,110	0,120	0,140	0,160	0,180
	1	1,5 x D	•	Required	140	150	165	fn	0,040	0,045	0,055	0,065	0,080	0,095	0,110	0,120	0,140	0,160	0,180
	2	1,5 x D	•	Required	140	150	165	fn	0,040	0,045	0,055	0,065	0,080	0,095	0,110	0,120	0,140	0,160	0,180
	3	1 x D	•	Required	105	115	120	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	4	1 x D	•	Required	90	100	110	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	5	0,5 x D	•	Required	70	75	80	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100
M	1	0,75 x D	•	Required	75	85	90	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	2	0,5 x D	•	Required	50	55	60	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100
	3	0,5 x D	•	Required	45	50	55	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100
K	1	1,5 x D	•	Preferred	110	120	130	fn	0,040	0,045	0,055	0,065	0,080	0,095	0,110	0,120	0,140	0,160	0,180
	2	1 x D	•	Required	100	110	120	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	3	1 x D	•	Required	90	100	110	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
S	1	0,3 x D	○	Required	80	85	90	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	2	0,1 x D	○	Required	55	60	65	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100
	3	0,1 x D	○	Required	20	25	28	fn	0,012	0,015	0,018	0,022	0,028	0,033	0,040	0,045	0,050	0,060	0,070
	4	0,2 x D	○	Required	35	40	45	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100
H	1	0,3 x D	○	Required	75	80	85	fn	0,028	0,033	0,040	0,050	0,060	0,070	0,085	0,100	0,110	0,125	0,150
	2	0,2 x D	○	Required	65	70	75	fn	0,018	0,020	0,025	0,035	0,040	0,050	0,055	0,065	0,075	0,085	0,100

Materials to Cut	<ul style="list-style-type: none"> • Steels (P0-P5). • Stainless steels (M1-M3). • Cast iron (K1-K3). • High-temp alloys (S1-S4). • Hardened materials (H1-H2).
Cutting Speed	<ul style="list-style-type: none"> • Refer to application data recommendation.
Feed Rate	<ul style="list-style-type: none"> • Refer to application data recommendation. • Works in same feed rate range as standard 4FL high-versatility tools, for productivity advantage follow application recommendation.
Depth of Cut	<ul style="list-style-type: none"> • Refer to application data recommendation.
Coolant	<ul style="list-style-type: none"> • External coolant preferred for steel, stainless, high-temp alloys, and hardened materials. • Pressurized air applicable for carbon steels. • Minimal quantity lubrication (MQL) and dry applicable for carbon steels.
Adaptation	<ul style="list-style-type: none"> • Hydraulic chuck with or without sleeve preferred. • Weldon® adaptor for Weldon shank tools preferred for high Ap/high Ae applications, but not recommended for finishing applications. • High-performance collet (HPMC) or milling power chucks applicable. • Shrink adaptor applicable.
Roughing Application	<ul style="list-style-type: none"> • Yes.
Finishing Application	<ul style="list-style-type: none"> • Yes.
Milling Strategy	<ul style="list-style-type: none"> • Traditional milling (full slotting, high Ae side and shoulder milling). • High velocity milling (dynamic milling, trochoidal milling).
Application Range	<ul style="list-style-type: none"> • Full slotting. • Shoulder milling. • Peel milling and HPC techniques. • Centre cutting. • Linear ramping at unlimited angle and 90° plunging. • Ramping into stainless and high-temperature alloys limited by coolant configuration. • Helical interpolation.
Engineered Solutions	<ul style="list-style-type: none"> • Available upon request.
Reconditioning Service	<ul style="list-style-type: none"> • Full reconditioning available with Kennametal reconditioning procedures. • Check services under Kennametal website for detailed information.

PROBLEM	CAUSE	REMEDIES
<ul style="list-style-type: none"> • Tool pullout. 	<ul style="list-style-type: none"> • High axial forces. • Wrong adaptor. • Unadapted application data. 	<ul style="list-style-type: none"> • Use Weldon chuck if applicable or adaptor with higher clamping force. • Reduce feed per tooth.
<ul style="list-style-type: none"> • Unevenly colored chips when slotting deep (>1.25 x D). 	<ul style="list-style-type: none"> • Not enough coolant in cutting zone. 	<ul style="list-style-type: none"> • Adjust coolant method to improve coolant in cutting zone.
<ul style="list-style-type: none"> • Sudden breakage when milling dry in Shrink Fit or hydraulic adaptor. 	<ul style="list-style-type: none"> • Tool is too hot and loses fit in adaptor. 	<ul style="list-style-type: none"> • Check temperature on adaptor/spindle. • Improve coolant provision or reduce cutting speed; eventually change to HPMC or Weldon, if applicable.
<ul style="list-style-type: none"> • Material build-up on cutting edge. 	<ul style="list-style-type: none"> • Cold welding of material at cutting edge. 	<ul style="list-style-type: none"> • Increase coolant in cutting zone. • Decrease cutting speed.
<ul style="list-style-type: none"> • High flank wear. 	<ul style="list-style-type: none"> • Unadapted application data. • High tool runout. 	<ul style="list-style-type: none"> • Decrease feed rate. • Check tool runout.
<ul style="list-style-type: none"> • Chipping on tool. 	<ul style="list-style-type: none"> • Unadapted application data. • Insufficient coolant. • High tool runout. • Unstable adaptor. • Clamping on coating area. 	<ul style="list-style-type: none"> • Adjust to recommended speeds and feeds. • Adjust coolant method to improve coolant in cutting zone. • Check runout; eventually change to more stable adaptor. • Adjust clamping to clamp on uncoated area only. • Minimise overhang length.



HARVI™ II

High-Performance Solid Carbide End Mills

Primary Application

The HARVI II system is designed to provide maximum metal removal rates with five unequally spaced flutes for roughing and finishing operations in side milling, slotting, and profiling. A wide range of diameters and corner configurations, such as chamfer, radii, and sharp edges, are available from stock.

- 1 x D slotting in titanium and stainless steels with five unequally spaced flutes.
- Roughing and finishing with one tool.
- KCPM15™ Beyond™ grade for long tool life.

Features and Benefits

Advanced Technology

- Five unequally spaced flutes for chatter-free machining at high feed rates.
- Proprietary parabolic core design increases stability.
- Ramping up to 3°.
- 1 x D full slotting capability in:
 - Titanium
 - Stainless steel

Tailored Grades

- KCPM15 Beyond grade for outstanding wear protection in stainless steel to mitigate crater, depth-of-cut notching, and flank wear.
- Universal KC643M™ grade suitable for cutting steel, cast iron, stainless steel (wet), and titanium (wet).

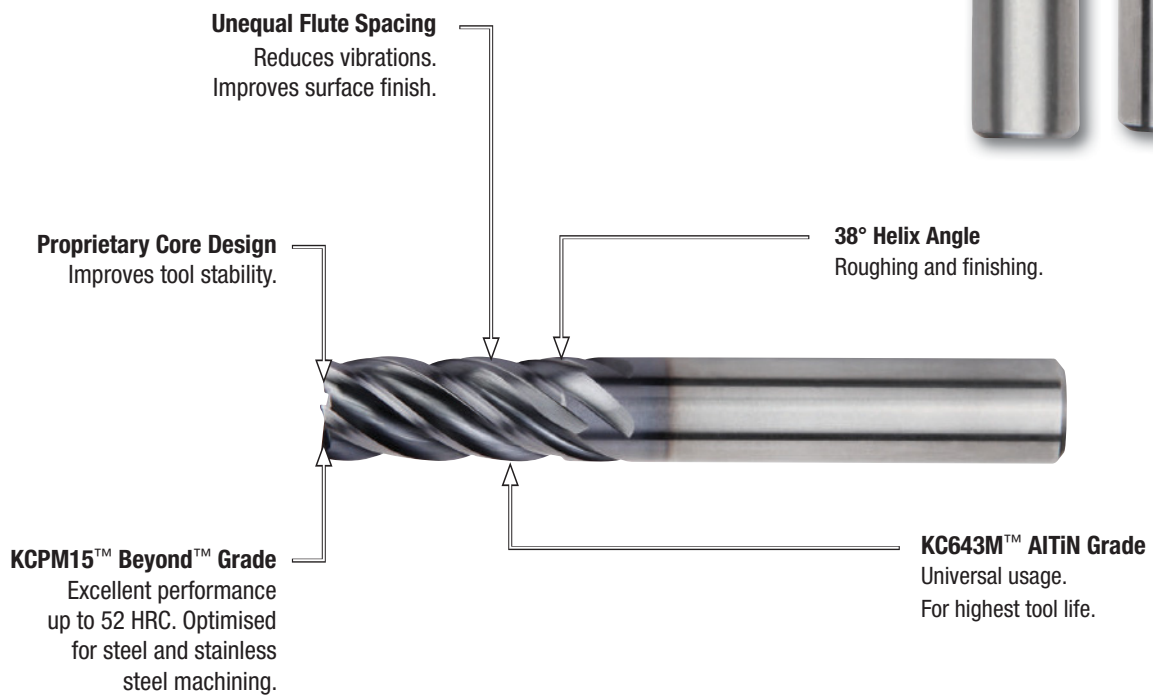
Customisation

- Intermediate diameters available.
- Expanded length of tool and increased length of cut possible.
- Chip divider geometry reduces power consumption and improves chip formation in difficult-to-cut materials.
- Ball-nose version available.
- Internal coolant axial and radial available.
- Various shanks and non-standard coatings available.
- Multiple steps possible.

Extensive Standard Offering

- Diameter range 4–25mm.
- Corner radii in necked and non-necked offering.

High-feed roughing and finishing with one tool at highest length of cut.



TURNING



MILLING



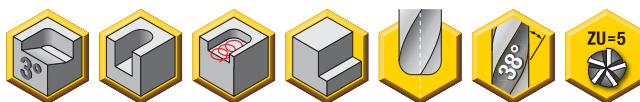
HOLEMAKING



TOOLING SYSTEMS

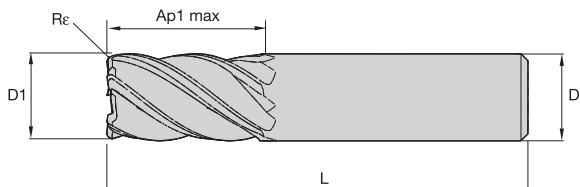


- Single tool for both roughing and finishing operations for fewer setups.
- Unequal flute spacing minimises chatter for smoother machining.
- Ramping up to 3°.
- Kennametal standard dimensions.
- Non-centre cutting.
- Five-flute geometry enables slotting up to 1 x D.

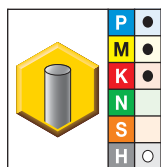


End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014/-0,028	≤3	+0/-0,006
>3-6	-0,020/-0,038	>3-6	+0/-0,008
>6-10	-0,025/-0,047	>6-10	+0/-0,009
>10-18	-0,032/-0,059	>10-18	+0/-0,011
>18-30	-0,040/-0,073	>18-30	+0/-0,013



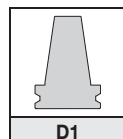
■ UCDE • 5-Flute • Metric



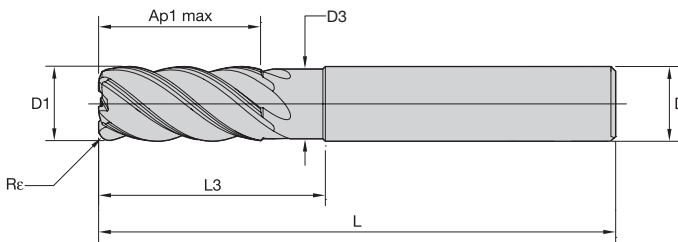
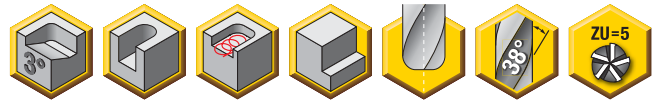
grade KCPM15

- first choice
- alternate choice

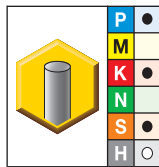
order #	catalogue #	D1	D	Ap1 max	L	Re
4046284	UCDE0400A5ARA	4,00	6,00	11,00	55,00	0,25
4046288	UCDE0500A5ARA	5,00	6,00	13,00	57,00	0,25
4046291	UCDE0600A5ARA	6,00	6,00	13,00	57,00	0,40
4046374	UCDE0700A5ARA	7,00	8,00	16,00	63,00	0,40
4046377	UCDE0800A5ARA	8,00	8,00	19,00	63,00	0,50
4046380	UCDE0900A5ARA	9,00	10,00	19,00	72,00	0,50
4046383	UCDE1000A5ARA	10,00	10,00	22,00	72,00	0,50
4046386	UCDE1200A5ARA	12,00	12,00	26,00	83,00	0,75
4046389	UCDE1400A5ARA	14,00	14,00	26,00	83,00	0,75
4046392	UCDE1600A5ARA	16,00	16,00	32,00	92,00	0,75
4046395	UCDE1800A5ARA	18,00	18,00	32,00	92,00	0,75
4046398	UCDE2000A5ARA	20,00	20,00	38,00	104,00	0,75
4046401	UCDE2500A5ARA	25,00	25,00	45,00	121,00	0,75



- Kennametal standard dimensions.
- Non-centre cutting.
- Ramping up to 3°.
- Optimised geometry for titanium machining.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.
- Five-flute geometry enables slotting up to 1 x D.


End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014 / -0,028	≤3	+0 / -0,006
>3-6	-0,020 / -0,038	>3-6	+0 / -0,008
>6-10	-0,025 / -0,047	>6-10	+0 / -0,009
>10-18	-0,032 / -0,059	>10-18	+0 / -0,011
>18-30	-0,040 / -0,073	>18-30	+0 / -0,013

UDDE • 5-Flute with Neck • Metric


grade KC643M

- first choice
- alternate choice

order #	catalogue #	D1	D	D3	Ap1 max	L3	L	Re
3524486	UDDE0600A5ARA	6,00	6,00	5,64	13,00	18,00	63,00	0,50
3524487	UDDE0600A5ARB	6,00	6,00	5,64	13,00	18,00	63,00	1,00
3524488	UDDE0600A5ARC	6,00	6,00	5,64	13,00	18,00	63,00	1,50
3524490	UDDE0800A5ARA	8,00	8,00	7,52	19,00	24,00	76,00	0,50
3524491	UDDE0800A5ARB	8,00	8,00	7,52	19,00	24,00	76,00	1,00
3524492	UDDE0800A5ARC	8,00	8,00	7,52	19,00	24,00	76,00	2,00
3524514	UDDE1000A5ARA	10,00	10,00	9,40	22,00	30,00	76,00	0,50
3524515	UDDE1000A5ARB	10,00	10,00	9,40	22,00	30,00	76,00	1,00
3524516	UDDE1000A5ARC	10,00	10,00	9,40	22,00	30,00	76,00	2,00
3524517	UDDE1000A5ARD	10,00	10,00	9,40	22,00	30,00	76,00	2,50
3524519	UDDE1200A5ARA	12,00	12,00	11,28	26,00	36,00	83,00	0,50
3524520	UDDE1200A5ARB	12,00	12,00	11,28	26,00	36,00	83,00	1,00
3524521	UDDE1200A5ARC	12,00	12,00	11,28	26,00	36,00	83,00	2,00
3524522	UDDE1200A5ARD	12,00	12,00	11,28	26,00	36,00	83,00	3,00
3873932	UDDE1400A5ARA	14,00	14,00	13,15	26,00	42,00	84,00	0,50
3874035	UDDE1400A5ARD	14,00	14,00	13,15	26,00	42,00	84,00	3,00
3524524	UDDE1600A5ARA	16,00	16,00	15,04	32,00	48,00	100,00	0,50
3524525	UDDE1600A5ARB	16,00	16,00	15,04	32,00	48,00	100,00	1,00
3524526	UDDE1600A5ARC	16,00	16,00	15,04	32,00	48,00	100,00	2,00
3524527	UDDE1600A5ARD	16,00	16,00	15,04	32,00	48,00	100,00	3,00
3524528	UDDE1600A5ARE	16,00	16,00	15,04	32,00	48,00	100,00	4,00
6063443	UDDE1600A5ARP	16,00	16,00	15,04	32,00	48,00	100,00	6,00
3524530	UDDE2000A5ARA	20,00	20,00	18,80	38,00	60,00	115,00	0,50
3524531	UDDE2000A5ARB	20,00	20,00	18,80	38,00	60,00	115,00	1,00
3524532	UDDE2000A5ARC	20,00	20,00	18,80	38,00	60,00	115,00	2,00
3524533	UDDE2000A5ARD	20,00	20,00	18,80	38,00	60,00	115,00	3,00
3524534	UDDE2000A5ARE	20,00	20,00	18,80	38,00	60,00	115,00	4,00
6063444	UDDE2000A5ARP	20,00	20,00	18,80	38,00	60,00	115,00	6,00
3524536	UDDE2500A5ARA	25,00	25,00	23,50	45,00	75,00	135,00	0,50
3524537	UDDE2500A5ARB	25,00	25,00	23,50	45,00	75,00	135,00	1,00
3524538	UDDE2500A5ARC	25,00	25,00	23,50	45,00	75,00	135,00	2,00
3524539	UDDE2500A5ARD	25,00	25,00	23,50	45,00	75,00	135,00	3,00
3524540	UDDE2500A5ARE	25,00	25,00	23,50	45,00	75,00	135,00	4,00
6063445	UDDE2500A5ARP	25,00	25,00	23,50	45,00	75,00	135,00	6,00



■ HARVI II • UCDE • Unequal Flute Spacing

Material Group	Side Milling (A) and Slotting (B)		KCPM15		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 10%.												
	A		B	Cutting Speed – vc m/min		mm	D1 – Diameter										
	ap	ae	ap	min	max		5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0	
P	0	1,5 x D	0,5 x D	1 x D	150	200	fz	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	3	1,5 x D	0,5 x D	1 x D	120	160	fz	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	4	1,5 x D	0,5 x D	0,75 x D	90	150	fz	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098
	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
M	1	1,5 x D	0,5 x D	1 x D	90	115	fz	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,5 x D	1 x D	60	80	fz	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
	3	1,5 x D	0,5 x D	1 x D	60	70	fz	0,020	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124
	2	1,5 x D	0,5 x D	1 x D	110	140	fz	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	3	1,5 x D	0,5 x D	1 x D	110	130	fz	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091
S	1	1,5 x D	0,3 x D	0,3 x D	-	-	fz	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	0,114
	2	1,5 x D	0,3 x D	0,3 x D	-	-	fz	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	3	1,5 x D	0,3 x D	0,3 x D	-	-	fz	0,016	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061
	4	1,5 x D	0,5 x D	1 x D	-	-	fz	0,021	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098

NOTE: Those guidelines may require variations to achieve optimum results.
 Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ HARVI II • UDDE • Unequal Flute Spacing

Material Group	Side Milling (A) and Slotting (B)		KC643M		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 10%.												
	A		B	Cutting Speed – vc m/min		mm	D1 – Diameter										
	ap	ae	ap	min	max		6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0		
P	5	1,5 x D	0,5 x D	1 x D	60	100	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091	
	6	1,5 x D	0,5 x D	0,75 x D	50	75	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,061	0,065	0,071	
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	0,124	
	2	1,5 x D	0,5 x D	1 x D	110	140	fz	0,036	0,050	0,061	0,07	0,079	0,087	0,095	0,101	0,114	
	3	1,5 x D	0,5 x D	1 x D	110	130	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	0,091	
S	1	1,5 x D	0,3 x D	0,3 x D	50	90	fz	0,036	0,050	0,061	0,07	0,079	0,087	0,095	0,101	0,114	
	2	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061	
	3	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,050	0,054	0,061	
	4	1,5 x D	0,5 x D	1 x D	50	60	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,069	0,074	0,084	
H	1	1,5 x D	0,5 x D	0,75 x D	80	140	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	0,098	

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centers, please adjust parameters accordingly on > 12mm diameter.
 Side milling applications — for longest reach (L3) tools, reduce Ae by 30%.
 Slot milling applications — for longest reach (L3) tools, reduce Ae by 30%.

CAS — Customer Application Support

Get Fast and Reliable Answers to Your Toughest Problems

Our CAS Team is the metalworking industry's leading help desk resource for tooling application solutions and problem resolution.

Easy Access to Proven Metalworking Expertise!

Kennametal Application Engineers assist customers and engineering groups throughout the world with expert tool selection and application recommendations for the entire range of Kennametal tooling.



Region	Originating Country	Language	CAS Hotline	Email
North America	USA	English	800 835 3668	na.techsupport@kennametal.com
	Mexico	Spanish	1800 253 0758	na.techsupport@kennametal.com
Africa	South Africa	English	0800 981643	na.techsupport@kennametal.com
Europe	Austria	German	0800 202873	eu.techsupport@kennametal.com
	Belgium	English/French	0800 80850	eu.techsupport@kennametal.com
	Denmark	English	808 89298	na.techsupport@kennametal.com
	Finland	English	0800 919412	na.techsupport@kennametal.com
	France	French	080 5540 367	eu.techsupport@kennametal.com
	Germany	German	0800 0006651	eu.techsupport@kennametal.com
	Israel	English	1809 449889	na.techsupport@kennametal.com
	Italy	Italian	800 916561	eu.techsupport@kennametal.com
	Netherlands	English	0800 0201 130	eu.techsupport@kennametal.com
	Norway	English	800 10080	na.techsupport@kennametal.com
	Poland	Polish	0080 04411887	eu.techsupport@kennametal.com
	Russia (landline)	Russian	8800 5556394	eu.techsupport@kennametal.com
	Russia (cell phone)	Russian	+7 800 5556394	eu.techsupport@kennametal.com
	Sweden	English	0207 99246	na.techsupport@kennametal.com
UK	English	0800 032 8339	na.techsupport@kennametal.com	
Ukraine	Russian	800 502664	eu.techsupport@kennametal.com	
Asia Pacific	Australia	English	1800 666 667	ap-kmt.techsupport@kennametal.com
	India	English	1 800 103 5227	in.techsupport@kennametal.com
	Japan	English	03 3820 2855	ap-kmt.techsupport@kennametal.com
	Korea (South)	English	+82 2 2100 6100	ap-kmt.techsupport@kennametal.com
	Malaysia	English	1800 812 990	ap-kmt.techsupport@kennametal.com
	New Zealand	English	0800 450 941	ap-kmt.techsupport@kennametal.com
	Singapore	English	1800 6221031	ap-kmt.techsupport@kennametal.com
	Taiwan	English	0800 666 197	ap-kmt.techsupport@kennametal.com
Thailand	English	1800 4417820	ap-kmt.techsupport@kennametal.com	

Numbers shown only serve the originating country listed.



➤ HARVI™ II Long

High-Performance Solid Carbide End Mills

Primary Application

The HARVI II Long system is designed for machining titanium, steels, and stainless steels with excellent surface finishes at maximum Metal Removal Rates (MRR). The extended cutting length enables the HARVI II Long system to machine deep pockets with thin walls in semi-finishing and finishing operations. It also reduces the number of cuts when machining wing profiles for the aerospace industry.

- Up to 5 x D side milling finishing operations in titanium and stainless steels.
- Exceptionally straight walls.
- Universal KC643M™ grade for long tool life.

Features and Benefits

Advanced Technology

- Five unequally spaced flutes for chatter-free machining at high feed rates, improving surface finish and tool life.
- 5 x D lengths for reduced number of cuts.
- Innovative core design increases stability for exceptionally straight walls.
- Improved feed rate in corner machining operations versus conventional cutters.

Tailored Grades

- Universal KC643M grade suitable for cutting steel, cast iron, stainless steel (wet), and titanium (wet).

Customisation

- Intermediate diameters available.
- Chip divider geometry available for reduced power consumption and improved chip formation in difficult-to-cut materials.
- Internal coolant axial, as well as radial, available.
- Various shank options and non-standard coatings available.

Extensive Standard Offering

- Diameter range 6–25mm.
- Various corner radii in stock.

5 x D lengths of cut without reduced feed rates when machining corners.



Innovative Core Design
Improves tool stability and wall straightness.

Unequal Flute Spacing
Reduces vibrations.
Improves surface finish.

KC643M™ AITiN Grade
Universal usage.
For highest tool life.

43° Helix Angle
Improves results and machining of corners.



TURNING



MILLING



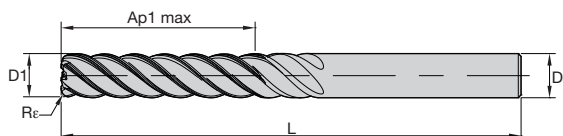
HOLEMAKING



TOOLING SYSTEMS



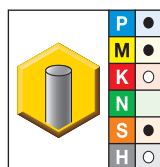
- For finishing and semi-finishing applications.
- Unequal flute spacing minimises chatter for smoother machining.
- Non-centre cutting.
- Kennametal standard dimensions.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014 / -0,028	≤3	+0 / -0,006
>3-6	-0,020 / -0,038	>3-6	+0 / -0,008
>6-10	-0,025 / -0,047	>6-10	+0 / -0,009
>10-18	-0,032 / -0,059	>10-18	+0 / -0,011
>18-30	-0,040 / -0,073	>18-30	+0 / -0,013

■ HARVI II • UGDE • 5 x D Lengths of Cut



grade KC643M

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L	Rε
4124327	UGDE0600A5BRA	6,00	6,00	30,00	76,00	0,20
4124328	UGDE0600A5BRB	6,00	6,00	30,00	76,00	0,50
4124329	UGDE0600A5BRC	6,00	6,00	30,00	76,00	1,00
4124343	UGDE0800A5BRA	8,00	8,00	40,00	87,00	0,20
4124344	UGDE0800A5BRB	8,00	8,00	40,00	87,00	0,50
4124345	UGDE0800A5BRC	8,00	8,00	40,00	87,00	1,00
4124350	UGDE1000A5BRA	10,00	10,00	50,00	100,00	0,50
4124351	UGDE1000A5BRB	10,00	10,00	50,00	100,00	1,00
4124352	UGDE1000A5BRC	10,00	10,00	50,00	100,00	2,00
4124353	UGDE1000A5BRD	10,00	10,00	50,00	100,00	2,50
4124358	UGDE1200A5BRA	12,00	12,00	60,00	125,00	0,50
4124359	UGDE1200A5BRB	12,00	12,00	60,00	125,00	1,00
4124360	UGDE1200A5BRC	12,00	12,00	60,00	125,00	2,00
4124361	UGDE1200A5BRD	12,00	12,00	60,00	125,00	2,50
4156132	UGDE1400A5BRD	14,00	14,00	70,00	120,00	3,00
4124367	UGDE1600A5BRA	16,00	16,00	80,00	141,00	1,00
4124368	UGDE1600A5BRB	16,00	16,00	80,00	141,00	2,00
4124369	UGDE1600A5BRC	16,00	16,00	80,00	141,00	2,50
4124370	UGDE1600A5BRD	16,00	16,00	80,00	141,00	3,00
4124371	UGDE1600A5BRE	16,00	16,00	80,00	141,00	4,00
6063449	UGDE1600A5BRP	16,00	16,00	80,00	141,00	6,00
4124377	UGDE2000A5BRA	20,00	20,00	100,00	166,00	1,00
4124378	UGDE2000A5BRB	20,00	20,00	100,00	166,00	2,00
4124379	UGDE2000A5BRC	20,00	20,00	100,00	166,00	2,50
4124380	UGDE2000A5BRD	20,00	20,00	100,00	166,00	3,00
4124381	UGDE2000A5BRE	20,00	20,00	100,00	166,00	4,00
6063450	UGDE2000A5BRP	20,00	20,00	100,00	166,00	6,00
4124387	UGDE2500A5BRA	25,00	25,00	125,00	190,00	1,00
4124388	UGDE2500A5BRB	25,00	25,00	125,00	190,00	2,00
4124390	UGDE2500A5BRD	25,00	25,00	125,00	190,00	3,00
4124391	UGDE2500A5BRE	25,00	25,00	125,00	190,00	4,00
6063471	UGDE2500A5BRP	25,00	25,00	125,00	190,00	6,00

■ HARVI II • UGDE • Unequal Flute Spacing • 5 x D Lengths of Cut

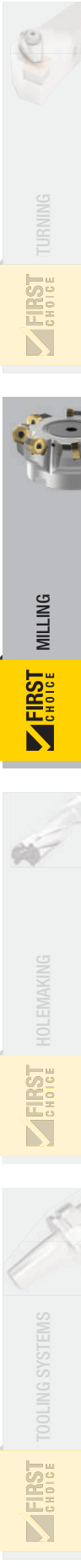
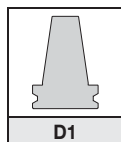
Material Group														
	Side Milling (A)		KC643M		Recommended feed per tooth (fz = mm/th) for side milling (A).									
	A		Cutting Speed – vc m/min			D1 – Diameter								
	ap	ae	min	max	mm	6,0	8,0	10,0	12,0	14,0	16,0	20,0	25,0	
P	1	Ap1 max	0,05 x D*	300	400	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	280	380	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	3	Ap1 max	0,05 x D*	240	320	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	4	Ap1 max	0,05 x D*	180	300	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098
	5	Ap1 max	0,05 x D*	120	200	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	6	Ap1 max	0,05 x D*	100	150	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
M	1	Ap1 max	0,05 x D*	180	230	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	120	160	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
	3	Ap1 max	0,05 x D*	120	140	fz	0,025	0,034	0,040	0,047	0,052	0,057	0,065	0,071
K	1	Ap1 max	0,05 x D*	240	300	fz	0,044	0,060	0,072	0,083	0,092	0,101	0,114	0,124
	2	Ap1 max	0,05 x D*	220	260	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	3	Ap1 max	0,05 x D*	200	260	fz	0,029	0,040	0,048	0,056	0,063	0,070	0,081	0,091
S	1	Ap1 max	0,05 x D*	100	180	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	2	Ap1 max	0,05 x D*	100	180	fz	0,036	0,050	0,061	0,070	0,079	0,087	0,101	0,114
	3	Ap1 max	0,05 x D*	50	80	fz	0,019	0,026	0,032	0,037	0,042	0,046	0,054	0,061
	4	Ap1 max	0,05 x D*	100	120	fz	0,026	0,037	0,045	0,052	0,058	0,064	0,074	0,084
H	1	Ap1 max	0,05 x D*	160	280	fz	0,033	0,045	0,054	0,062	0,070	0,077	0,088	0,098

* For the above cutting data, do not exceed an overall ae of 0,8mm.

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.

Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.

Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.



HARVI™ III

High-Performance Solid Carbide End Mills

Primary Application

The HARVI III system takes high-performance profiling, semi-finishing, and finishing to the next level. These end mills are designed to provide maximum metal removal rates in titanium and stainless steel while achieving supreme surface conditions. A wide range of diameters and corner radii are available from stock.

- Outstanding metal removal rates increase productivity.
- Longest tool life due to eccentric relief grind and proprietary KCSM15™ Beyond™ grade.
- Increased process safety with Safe-Lock™ shanks.

Features and Benefits

Advanced Technology

- Six unequally spaced flutes for chatter-free machining at high feed rates.
- Lower cutting forces and pressure on cutting edge through tailored axial and radial rake angles.
- Eccentric relief design increases tool life through higher edge stability.
- Proprietary tapered core provides highest tool stability in roughing and finishing operations.
- Centre cutting design for higher flexibility as well as radial and axial finishing pass after roughing operation.

Tailored Grades

- KCSM15 Beyond grade for exceptional tool life in titanium and stainless steels.

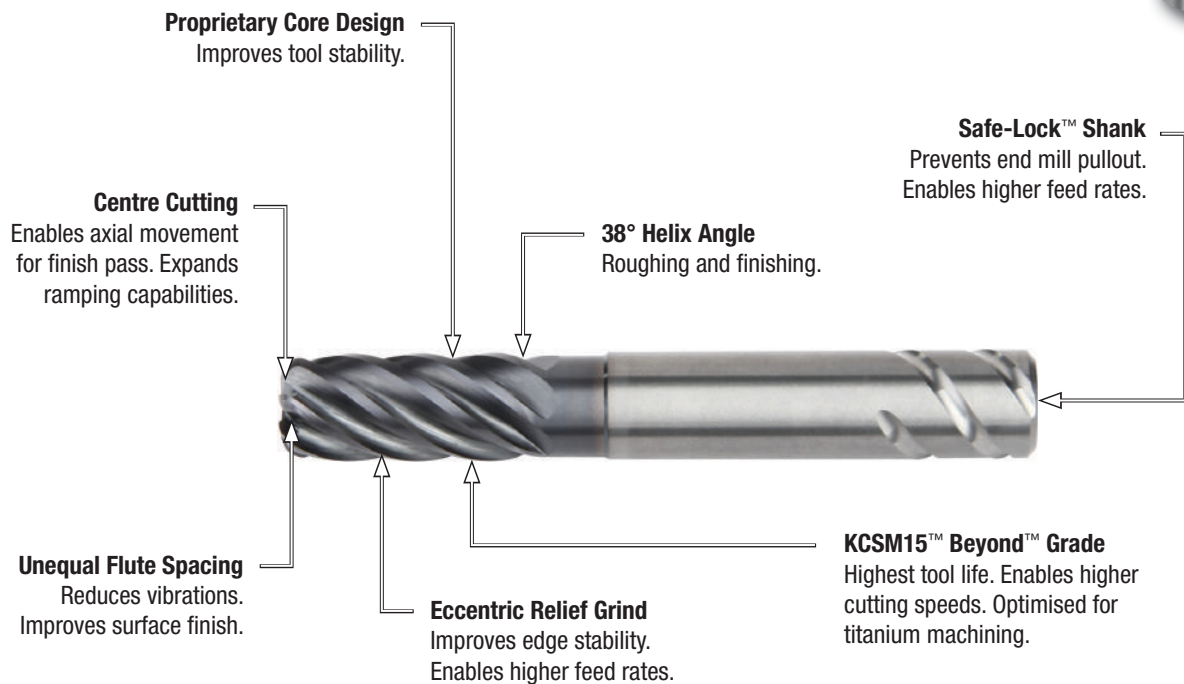
Customisation

- Engineered solutions, including ball nose versions, are available upon request.

Extensive Standard Offering

- Diameter ranges 12–25mm.
- Necked and corner radii offering.

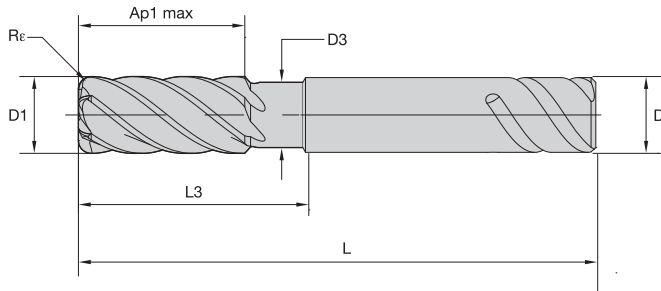
Maximum metal removal rates in machining titanium and stainless steel with supreme surfaces.



SAFE-LOCK®
by HAIMER®



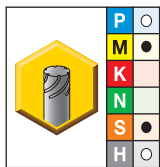
- Kennametal standard dimensions.
- Centre cutting.
- Optimised geometry for titanium machining.
- Unequal flute spacing minimises chatter for smoother machining.
- Single tool for both roughing and finishing operations requiring fewer setups.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6
≤3	-0,014 / -0,028	≤3	+0 / -0,006
>3-6	-0,020 / -0,038	>3-6	+0 / -0,008
>6-10	-0,025 / -0,047	>6-10	+0 / -0,009
>10-18	-0,032 / -0,059	>10-18	+0 / -0,011
>18-30	-0,040 / -0,073	>18-30	+0 / -0,013

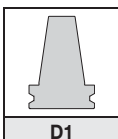
■ **UJDE • 6 Flute with Eccentric Relief Grind and Neck • Metric**



grade KCSM15

- first choice
- alternate choice

order #	catalogue #	D1	D	D3	Ap1 max	L3	L	Re
5350332	UJDE1200E6AQE	12,00	12,00	11,28	26,00	36,00	83,00	0,50
5350333	UJDE1200E6AQG	12,00	12,00	11,28	26,00	36,00	83,00	1,00
5350348	UJDE1600E6AQE	16,00	16,00	15,04	32,00	48,00	100,00	0,50
5350349	UJDE1600E6AQG	16,00	16,00	15,04	32,00	48,00	100,00	1,00
5350350	UJDE1600E6AQK	16,00	16,00	15,04	32,00	48,00	100,00	2,00
5350352	UJDE1600E6AQN	16,00	16,00	15,04	32,00	48,00	100,00	4,00
5350644	UJDE2000E6AQE	20,00	20,00	18,80	38,00	60,00	115,00	0,50
5350645	UJDE2000E6AQG	20,00	20,00	18,80	38,00	60,00	115,00	1,00
5350646	UJDE2000E6AQK	20,00	20,00	18,80	38,00	60,00	115,00	2,00
5350647	UJDE2000E6AQM	20,00	20,00	18,80	38,00	60,00	115,00	3,00
5350648	UJDE2000E6AQN	20,00	20,00	18,80	38,00	60,00	115,00	4,00



■ HARVI III • UJDE • Unequal Flute Spacing • Roughing • With Neck

Material Group		Side Milling (A)		KCSM15		Recommended feed per tooth (fz = mm/th) for side milling (A).				
		A		Cutting Speed – vc m/min		mm	D1 – Diameter			
		ap	ae	min	max		12,0	16,0	18,0	20,0
P	4	Ap max	0,4 x D	90	150	fz	0,062	0,077	0,083	0,088
	5	Ap max	0,4 x D	60	100	fz	0,056	0,070	0,076	0,081
M	1	Ap max	0,4 x D	90	115	fz	0,070	0,087	0,095	0,101
	2	Ap max	0,4 x D	60	80	fz	0,056	0,070	0,076	0,081
	3	Ap max	0,4 x D	60	70	fz	0,047	0,057	0,061	0,065
S	1	Ap max	0,4 x D	50	90	fz	0,070	0,087	0,095	0,101
	2	Ap max	0,4 x D	25	40	fz	0,037	0,046	0,050	0,054
	3	Ap max	0,4 x D	25	40	fz	0,037	0,046	0,050	0,054
	4	Ap max	0,4 x D	50	60	fz	0,052	0,064	0,069	0,074
H	1	Ap max	0,4 x D	80	140	fz	0,062	0,077	0,083	0,088

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ HARVI III • UJDE • Unequal Flute Spacing • Finishing • With Neck

Material Group		Side Milling (A)		KCSM15		Recommended feed per tooth (fz = mm/th) for side milling (A).					
		A		Cutting Speed – vc m/min		mm	D1 – Diameter				
		ap	ae	min	max		12,0	14,0	16,0	18,0	20,0
P	4	Ap max	0,06 x D	171	285	fz	0,075	0,084	0,092	0,099	0,106
	5	Ap max	0,06 x D	114	190	fz	0,067	0,076	0,084	0,091	0,097
M	1	Ap max	0,06 x D	171	218,5	fz	0,084	0,095	0,105	0,113	0,121
	2	Ap max	0,06 x D	114	152	fz	0,067	0,076	0,084	0,091	0,097
	3	Ap max	0,06 x D	114	133	fz	0,056	0,062	0,068	0,073	0,078
S	1	Ap max	0,06 x D	95	171	fz	0,084	0,095	0,105	0,113	0,121
	2	Ap max	0,06 x D	47,5	76	fz	0,045	0,050	0,056	0,060	0,065
	3	Ap max	0,06 x D	47,5	76	fz	0,045	0,050	0,056	0,060	0,065
	4	Ap max	0,06 x D	95	114	fz	0,062	0,070	0,077	0,083	0,089
H	1	Ap max	0,06 x D	152	266	fz	0,075	0,084	0,092	0,099	0,106
	2	Ap max	0,06 x D	133	228	fz	0,056	0,062	0,068	0,073	0,078

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.



➤ High-Performance Solid Carbide Roughing End Mills

Primary Application

High-performance roughers can be applied in a wide range of workplace materials such as steels, stainless steels, cast irons, and in certain cases, hardened materials. Tailored roughing profiles reduce cutting forces to the necessary level or combine roughing and semi-finishing for fewer tool changes.

- High-performance universal tools for almost all cutting materials.
- Lower cutting forces and spindle power consumption.
- Centre cutting for plunging, ramping, profiling, high-feed slotting, and side milling.

Features and Benefits

Advanced Technology

- Up to full length of cut for:
 - Slotting
 - Side milling
 - Profiling
 - Semi-finishing
- Various roughing profiles available for the right balance between cutting forces, feed rates, and surface quality.

Tailored Grades

- From proprietary KCPM15™ Beyond™ grade for outstanding wear to uncoated tools suitable for a variety of workpiece materials.

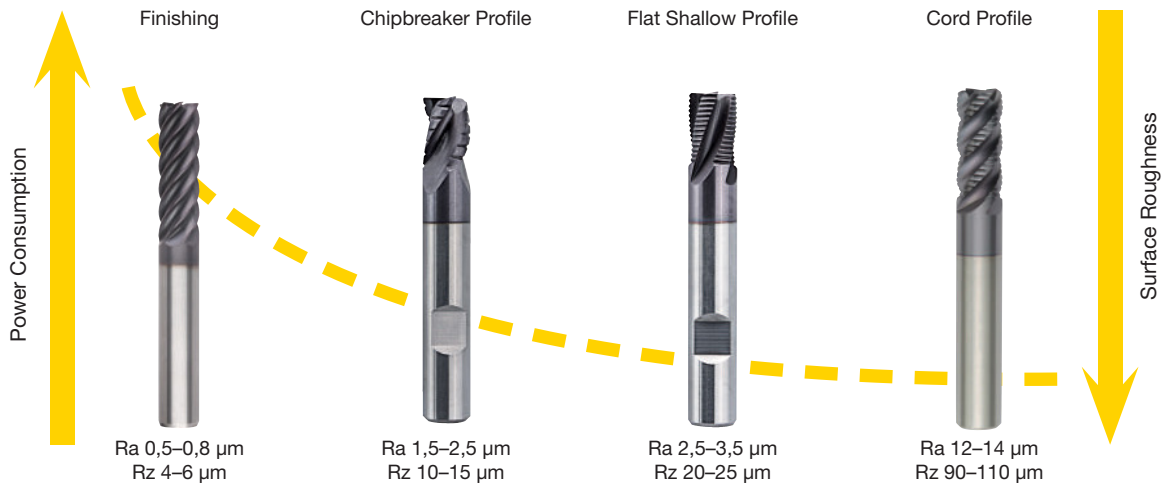
Customisation

- Intermediate diameters available.
- Corner radii for near-shape roughing operations available.
- Various shank options, including the Safe-Lock™ system by HAIMER®, and non-standard coatings available.

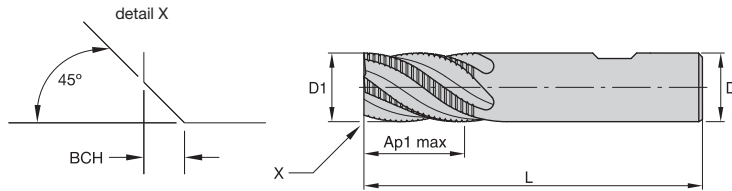
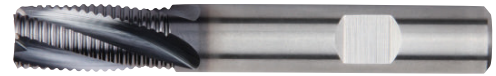
Extensive Standard Offering

- Diameter ranges 4–25mm.
- Weldon® shank for maximum torque transmission.

Highest metal removal rates — even on unstable machines or workpiece clamping.



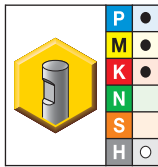
- Kennametal standard dimensions.
- Centre cutting.
- Cord profile.



End Mill Tolerances

D1	tolerance d11	D	tolerance h6
≤ 3	-0,020/-0,080	≤ 3	+0/-0,006
> 3-6	-0,030/-0,105	> 3-6	+0/-0,008
> 6-10	-0,040/-0,130	> 6-10	+0/-0,009
> 10-18	-0,050/0,160	> 10-18	+0/-0,011
> 18-30	-0,065/-0,195	> 18-30	+0/-0,013

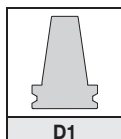
■ F3BH-F4BJ-F5BJ...WS-WM-WL-WX • Metric



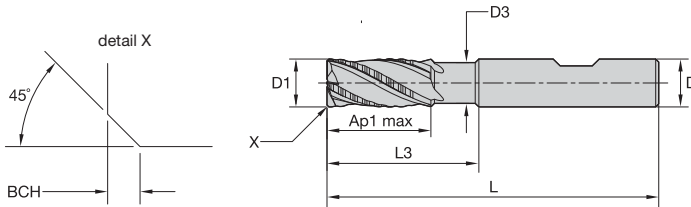
grade KCPM15

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L	BCH	Z U
4047065	F3BH0400BWS20L110	4,00	6,00	11,00	55,00	0,30	3
4047066	F3BH0500BWS20L130	5,00	6,00	13,00	57,00	0,30	3
4047067	F3BH0600BWS20L080	6,00	6,00	8,00	54,00	0,30	3
4047068	F3BH0600BWS20L130	6,00	6,00	13,00	57,00	0,30	3
4047070	F3BH0800BWS20L110	8,00	8,00	11,00	58,00	0,30	3
4047069	F3BH0800BWM20L160	8,00	8,00	16,00	63,00	0,30	3
4047071	F4BJ1000BWM20L130	10,00	10,00	13,00	66,00	0,50	4
4047072	F4BJ1000BWM20L220	10,00	10,00	22,00	72,00	0,50	4
4047074	F4BJ1200BWM20L160	12,00	12,00	16,00	73,00	0,50	4
4047073	F4BJ1200BWL20L260	12,00	12,00	26,00	83,00	0,50	4
4047075	F4BJ1400BWL20L260	14,00	14,00	26,00	83,00	0,50	4
4047076	F4BJ1600BWL20L190	16,00	16,00	19,00	82,00	0,50	4
4047077	F4BJ1600BWL20L320	16,00	16,00	32,00	92,00	0,50	4
4047078	F4BJ2000BWL20L220	20,00	20,00	22,00	92,00	0,50	4
4047079	F4BJ2000BWX20L380	20,00	20,00	38,00	104,00	0,50	4
4047080	F5BJ2500BWX20L450	25,00	25,00	45,00	121,00	0,50	5



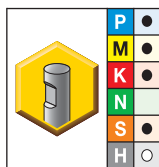
- Kennametal standard dimensions.
- Centre cutting.
- Flat shallow profile.



End Mill Tolerances

D1	tolerance d11	D	tolerance h6 + / -
≤ 3	-0,020/-0,080	≤ 3	0/0,006
> 3-6	-0,030/-0,105	> 3-6	0/0,008
> 6-10	-0,040/-0,130	> 6-10	0/0,009
> 10-18	-0,050/-0,160	> 10-18	0/0,011
> 18-30	-0,065/-0,195	> 18-30	0/0,013

■ RUDC.. • With Neck • Metric



grade KCPM15

- first choice
- alternate choice

order #	catalogue #	D1	D	D3	length of cut Ap1 max	L3	length L	BCH	Z U
5357041	RUDC0400B3BN	4,00	6,00	3,60	8,00	21,00	57,00	0,30	3
5357042	RUDC0500B3BN	5,00	6,00	4,60	13,00	21,00	57,00	0,30	3
5357043	RUDC0600B3BN	6,00	6,00	5,50	13,00	21,00	57,00	0,30	3
5357044	RUDC0800B3BN	8,00	8,00	7,50	16,00	27,00	63,00	0,30	3
5357045	RUDC1000B4BN	10,00	10,00	9,50	22,00	32,00	72,00	0,50	4
5357046	RUDC1200B4BN	12,00	12,00	11,00	26,00	38,00	83,00	0,50	4
5357047	RUDC1400B4BN	14,00	14,00	13,00	26,00	38,00	83,00	0,50	4
5357048	RUDC1600B4BN	16,00	16,00	15,00	32,00	44,00	92,00	0,50	4
5357049	RUDC1800B4BN	18,00	18,00	17,00	32,00	44,00	92,00	0,50	4
5357090	RUDC2000B4BN	20,00	20,00	19,00	38,00	54,00	104,00	0,50	4
5357091	RUDC2500B5BN	25,00	25,00	24,00	45,00	65,00	121,00	0,50	5



F3BH-F4BJ-F5BJ...WS-WM-WL-WX

Material Group	Side Milling (A) and Slotting (B)		KCPM15		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.													
			Cutting Speed – vc m/min		D1 – Diameter													
	A	B	min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0		
P	0	1,5 x D	0,5 x D	1 x D	150	200	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,018	0,023	0,028	0,038	0,046	0,053	0,060	0,065	0,070	0,075	0,083
M	1	1,5 x D	0,4 x D	0,75 x D	90	115	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	2	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,021	0,025	0,034	0,041	0,048	0,054	0,059	0,064	0,069	0,077
	3	1,5 x D	0,4 x D	0,75 x D	60	70	fz	0,014	0,017	0,021	0,029	0,034	0,040	0,044	0,048	0,052	0,055	0,060
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	3	1,5 x D	0,4 x D	1 x D	110	130	fz	0,016	0,021	0,025	0,034	0,041	0,048	0,054	0,059	0,064	0,069	0,077
H	1	1,5 x D	0,3 x D	0,3 x D	80	140	fz	0,018	0,023	0,028	0,038	0,046	0,053	0,060	0,065	0,070	0,075	0,083

NOTE: Those guidelines may require variations to achieve optimum results.
 Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

TURNING

MILLING

HOLEMAKING

TOOLING SYSTEMS

■ RUDC.. • With Neck • Metric

Material Group							Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 10%.											
	Side Milling (A) and Slotting (B)		KCPM15		Cutting Speed – vc m/min		D1 – Diameter											
	A		B		min	max	mm	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	25,0
	ap	ae	ap					fz	fz	fz	fz	fz	fz	fz	fz	fz	fz	fz
P	0	1,5 x D	0,5 x D	1 x D	150	200	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	1	1,5 x D	0,5 x D	1 x D	150	200	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	2	1,5 x D	0,5 x D	1 x D	140	190	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	3	1,5 x D	0,4 x D	0,75 x D	120	160	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	4	1,5 x D	0,3 x D	0,3 x D	90	150	fz	0,018	0,023	0,028	0,038	0,046	0,053	0,060	0,065	0,070	0,075	0,083
M	1	1,5 x D	0,4 x D	0,75 x D	60	115	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	2	1,5 x D	0,4 x D	0,75 x D	60	80	fz	0,016	0,021	0,025	0,034	0,041	0,048	0,054	0,059	0,064	0,069	0,077
	3	1,5 x D	0,4 x D	0,75 x D	60	70	fz	0,014	0,017	0,021	0,029	0,034	0,040	0,044	0,048	0,052	0,055	0,060
K	1	1,5 x D	0,5 x D	1 x D	120	150	fz	0,024	0,031	0,037	0,051	0,061	0,070	0,079	0,086	0,092	0,097	0,105
	2	1,5 x D	0,4 x D	1 x D	110	140	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	3	1,5 x D	0,4 x D	1 x D	110	130	fz	0,016	0,021	0,025	0,034	0,041	0,048	0,054	0,059	0,064	0,069	0,077
S	1	1,5 x D	0,4 x D	0,75 x D	50	90	fz	0,020	0,025	0,031	0,043	0,051	0,060	0,067	0,074	0,080	0,086	0,097
	3	1,5 x D	0,3 x D	0,3 x D	25	40	fz	0,011	0,014	0,017	0,022	0,027	0,032	0,036	0,039	0,043	0,046	0,052
H	1	1,5 x D	0,3 x D	0,3 x D	80	140	fz	0,018	0,023	0,028	0,038	0,046	0,053	0,060	0,065	0,070	0,075	0,083

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.



MaxiMet™

Primary Application

The MaxiMet system provides extraordinary metal removal rates and combines roughing and finishing operations with any aluminium plunging, slotting, and profiling application. Its proprietary flute geometry is designed for high stiffness and improved chip evacuation, and generates exceptional wall to floor perpendicularity in thin-wall applications. To ensure a superior floor surface finish, the MaxiMet front geometry is equipped with a wiper facet grind.

- Use only one tool for roughing and finishing operations.
- Slotting depths up to 1 x D as well as side milling up to 0.5 x D radial and 1.5 x D axial engagement.
- Unequal flute spacing for chatter-free performance with the 3-flute series.
- Multiple corner radii and extended neck configurations available as standard.

Features and Benefits

Advanced Technology

- Increase output with fewer tool changes and increased metal removal rates.
- No specific tools for roughing and finishing necessary.
- Fewer passes due to 1 x D slotting capability.
- Perfect for MQL (minimum quantity lubrication) methods.

Tailored Grades

- K600 uncoated grade for longest tool life in aluminium and other non-ferrous materials.

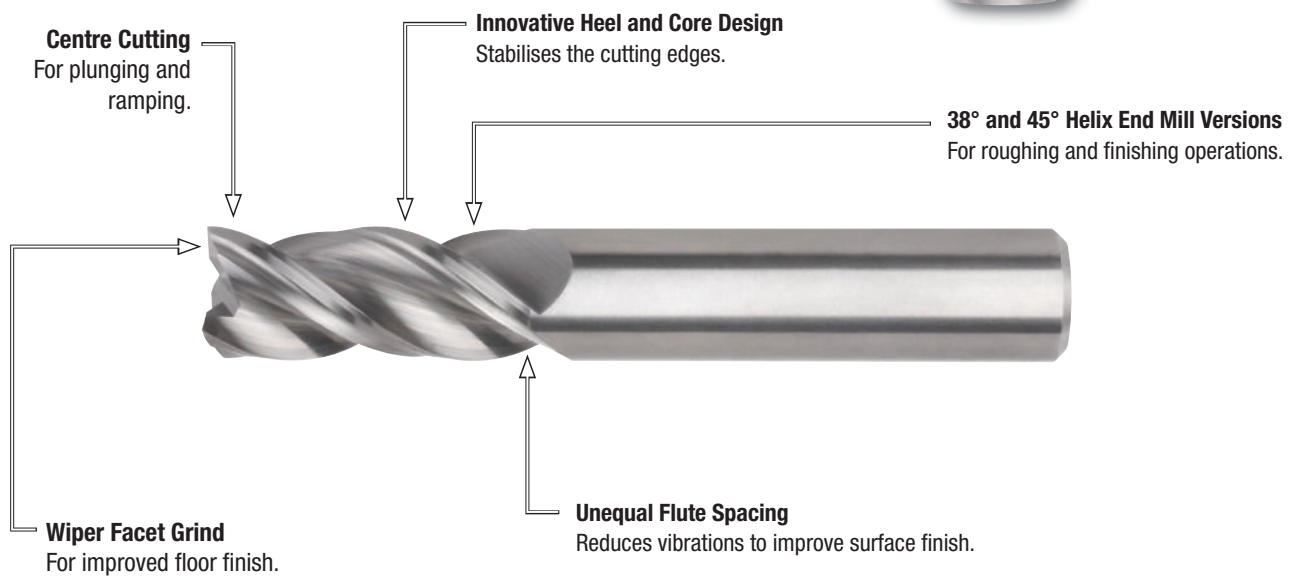
Customisation

- Intermediate diameters available.
- Custom solutions available for machining titanium and other high-temperature alloys.
- Internal coolant axial and radial available.
- Various shank options and non-standard coatings available.

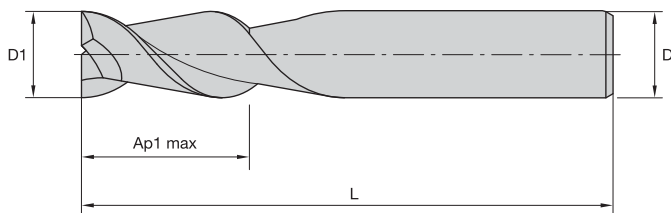
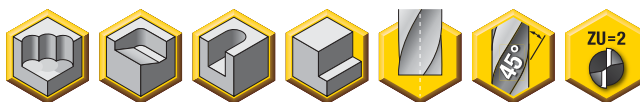
Extensive Standard Offering

- Diameter ranges 1,5 to 25mm.
- Extended neck for long-reach applications and radii and sharp corner configurations.

Solid carbide end mills for high metal removal rates and superior surface finishes in aluminium.



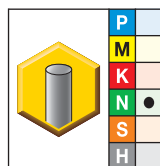
- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.



End Mill Tolerances

D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

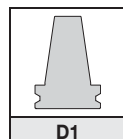
■ ABDF • Wiper Facet



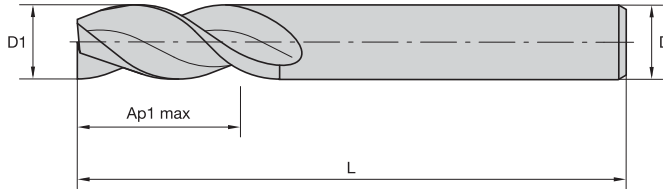
grade K600

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L
3637552	ABDF0150A2AS	1,50	3,00	6,00	38,00
3637553	ABDF0200A2AS	2,00	3,00	8,00	38,00
3637554	ABDF0250A2AS	2,50	3,00	9,00	38,00
3637555	ABDF0300A2AS	3,00	3,00	12,00	38,00
3637556	ABDF0400A2AS	4,00	4,00	12,00	50,00
3637557	ABDF0500A2AS	5,00	6,00	14,00	50,00
3637558	ABDF0600A2AS	6,00	6,00	16,00	50,00
3637559	ABDF0800A2AS	8,00	8,00	20,00	63,00
3637560	ABDF1000A2AS	10,00	10,00	22,00	76,00
3637561	ABDF1200A2AS	12,00	12,00	25,00	76,00
3637562	ABDF1400A2AS	14,00	14,00	32,00	83,00
3637563	ABDF1600A2AS	16,00	16,00	32,00	89,00
3637564	ABDF1800A2AS	18,00	18,00	38,00	100,00
3637565	ABDF2000A2AS	20,00	20,00	38,00	104,00

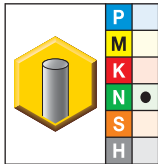


- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.



End Mill Tolerances		
D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

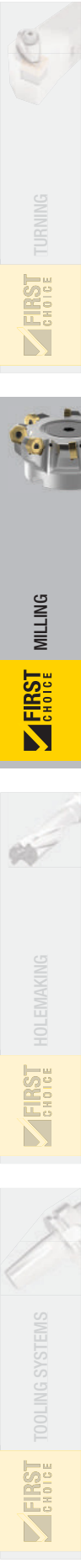
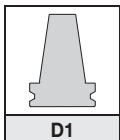
■ ABDE • Wiper Facet



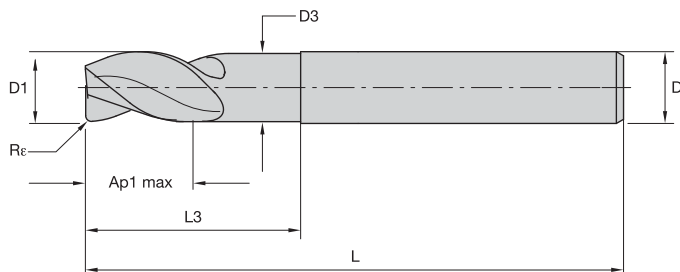
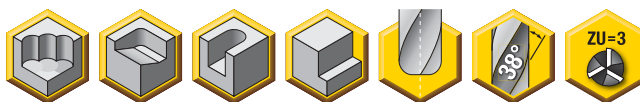
grade K600

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L
3637429	ABDE0300A3AS	3,00	3,00	12,00	38,00
3637430	ABDE0400A3AS	4,00	4,00	12,00	50,00
3637431	ABDE0500A3AS	5,00	5,00	14,00	50,00
3637432	ABDE0600A3AS	6,00	6,00	16,00	50,00
3637463	ABDE0800A3AS	8,00	8,00	20,00	63,00
3637464	ABDE1000A3AS	10,00	10,00	22,00	76,00
3637465	ABDE1200A3AS	12,00	12,00	25,00	76,00
3637466	ABDE1400A3AS	14,00	14,00	32,00	83,00
3637467	ABDE1600A3AS	16,00	16,00	32,00	89,00
3637468	ABDE1800A3AS	18,00	18,00	38,00	100,00
3637469	ABDE2000A3AS	20,00	20,00	38,00	104,00

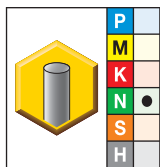


- Kennametal standard dimensions.
- Centre cutting.
- Effective in thin wall applications.
- Wiper facet, special end gash, and flute geometry provide better surface finishes.
- Unique geometry delivers maximum metal removal rates.



End Mill Tolerances		
D1	D1 tolerance	D tolerance
<6mm	DIN e8	DIN h6
>6mm	DIN h6	DIN h6

■ ABDE • Wiper Facet • Extended Neck



grade K600

- first choice
- alternate choice

order #	catalogue #	D1	D	Ap1 max	L	Re
3637389	ABDE0600A3ARA	6,00	6,00	9,00	63,00	0,20
3637390	ABDE0600A3ARB	6,00	6,00	9,00	63,00	0,50
3637391	ABDE0600A3ARC	6,00	6,00	9,00	63,00	1,00
3637392	ABDE0800A3ARA	8,00	8,00	12,00	76,00	0,20
3637413	ABDE0800A3ARB	8,00	8,00	12,00	76,00	0,50
3637414	ABDE0800A3ARC	8,00	8,00	12,00	76,00	1,00
3637415	ABDE1000A3ARA	10,00	10,00	15,00	89,00	0,20
3637416	ABDE1000A3ARB	10,00	10,00	15,00	89,00	0,50
5414455	ABDE1000A3ARG	10,00	10,00	15,00	76,00	1,00
3637417	ABDE1000A3ARC	10,00	10,00	15,00	89,00	1,50
5414456	ABDE1000A3ARK	10,00	10,00	15,00	76,00	2,00
5414458	ABDE1000A3ARN	10,00	10,00	15,00	76,00	4,00
3637418	ABDE1200A3ARA	12,00	12,00	18,00	100,00	0,20
3637419	ABDE1200A3ARB	12,00	12,00	18,00	100,00	0,50
5414459	ABDE1200A3ARG	12,00	12,00	18,00	83,00	1,00
3637420	ABDE1200A3ARC	12,00	12,00	18,00	100,00	1,50
5414470	ABDE1200A3ARK	12,00	12,00	18,00	83,00	2,00
5414471	ABDE1200A3ARM	12,00	12,00	18,00	83,00	3,00
5414473	ABDE1200A3ARN	12,00	12,00	18,00	83,00	4,00
3637421	ABDE1600A3ARA	16,00	16,00	24,00	110,00	0,20
3637422	ABDE1600A3ARB	16,00	16,00	24,00	110,00	0,50
3637423	ABDE1600A3ARC	16,00	16,00	24,00	110,00	1,00
3637424	ABDE1600A3ARD	16,00	16,00	24,00	110,00	2,00
6066132	ABDE1600A3ARL	16,00	16,00	24,00	110,00	2,50
5414474	ABDE1600A3ARM	16,00	16,00	24,00	100,00	3,00
5414475	ABDE1600A3ARN	16,00	16,00	24,00	100,00	4,00
3637425	ABDE2000A3ARA	20,00	20,00	30,00	125,00	0,20
3637426	ABDE2000A3ARB	20,00	20,00	30,00	125,00	0,50
3637427	ABDE2000A3ARC	20,00	20,00	30,00	125,00	1,50
5414477	ABDE2000A3ARK	20,00	20,00	30,00	115,00	2,00
5414478	ABDE2000A3ARM	20,00	20,00	30,00	115,00	3,00
3637428	ABDE2000A3ARD	20,00	20,00	30,00	125,00	4,00
5414479	ABDE2500A3ARE	25,00	25,00	37,50	135,00	0,50

■ ABDE... • ABDF...

Material Group					K600		Feed per Tooth – fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
	Side Milling (A) and Slotting (B)															
	A		B		Cutting Speed – vc m/min		D1 – Diameter									
	ap	ae	ap		min	max	mm	1,5	2,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
N	1	1,5 x D	0,5 x D	1,0 x D	500	2000	fz	0,014	0,018	0,036	0,054	0,072	0,090	0,108	0,144	0,180
	2	1,5 x D	0,5 x D	1,0 x D	500	1500	fz	0,012	0,016	0,032	0,049	0,065	0,081	0,097	0,130	0,162
	3	1,5 x D	0,5 x D	1,0 x D	500	1500	fz	0,009	0,013	0,025	0,038	0,050	0,063	0,076	0,101	0,126
	4	1,5 x D	0,5 x D	1,0 x D	400	750	fz	0,009	0,013	0,025	0,038	0,050	0,063	0,076	0,101	0,126
	5	1,5 x D	0,5 x D	1,0 x D	250	1000	fz	0,012	0,016	0,032	0,049	0,065	0,081	0,097	0,130	0,162

NOTE: Those guidelines may require variations to achieve optimum results. For better surface finish, reduce feed per tooth.

For cutting aluminium with high silicon, TiCN coating is recommended.

Ap for milling machine with ceramic bearings spindle, multiply by 0,5.

For better surface finish, reduce feed per tooth.

Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

For tools with reach >3 x D, reduce fz by 20%

For tools with reach >5 x D, reduce fz by 30%.

For tools with reach >10 x D, reduce vc and fz by 30%.

■ ABDE... • Extended Neck

Material Group					K600		Feed per Tooth – fz information is for side milling (A). For slotting (B), reduce fz by 20%.									
	Side Milling (A) and Slotting (B)															
	A		B		Cutting Speed – vc m/min		D1 – Diameter									
	ap	ae	ap		min	max	mm	6,0	8,0	10,0	12,0	16,0	20,0	25,0		
N	1	1 x D	0,5 x D	1,0 x D	500	2000	fz	0,060	0,080	0,100	0,120	0,160	0,200	0,240		
	2	1 x D	0,5 x D	1,0 x D	500	1500	fz	0,054	0,072	0,090	0,108	0,144	0,180	0,220		
	3	1 x D	0,5 x D	1,0 x D	500	1500	fz	0,042	0,056	0,070	0,084	0,112	0,140	0,180		
	4	1 x D	0,5 x D	1,0 x D	400	750	fz	0,042	0,056	0,070	0,084	0,112	0,140	0,180		
	5	1 x D	0,5 x D	1,0 x D	250	1000	fz	0,054	0,072	0,090	0,108	0,144	0,180	0,220		

NOTE: Those guidelines may require variations to achieve optimum results. For better surface finish, reduce feed per tooth.

For cutting aluminium with high silicon, TiCN coating is recommended.

Ap for milling machine with ceramic bearings spindle, multiply by 0,5.

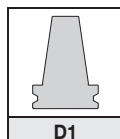
For better surface finish, reduce feed per tooth.

Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

For tools with reach >3 x D, reduce fz by 20%

For tools with reach >5 x D, reduce fz by 30%.

For tools with reach >10 x D, reduce vc and fz by 30%.



➤ G0mill™ GP General Purpose Solid Carbide End Mills • 2 Flute

Primary Application

The G0mill GP series offers plunging, slotting, and profiling with long tool life on a wide range of workpiece materials. They are designed to provide high Metal Removal Rates (MRR) and achieve good surface quality at an excellent cost-benefit ratio. A wide range of diameters and lengths are available with chamfered edge and ball nose as stocked standard.

- Roughing and finishing with one tool.
- Excellent cost-benefit ratio.
- Multilayer KC633M™ grades for high tool life.



Features and Benefits

Advanced Technology

- Roughing and finishing with one tool reduces tool changes and unnecessary tooling inventory.
- Eccentric relief increases edge stability for longer tool life and better surface quality.
- Eccentric relief eases regrinding and reduces reconditioning cost.
- 2-flute design for unstable conditions and high flexibility.

Tailored Grades

- Universal multilayer KC633M coating for cutting steel, cast iron, and stainless (wet).

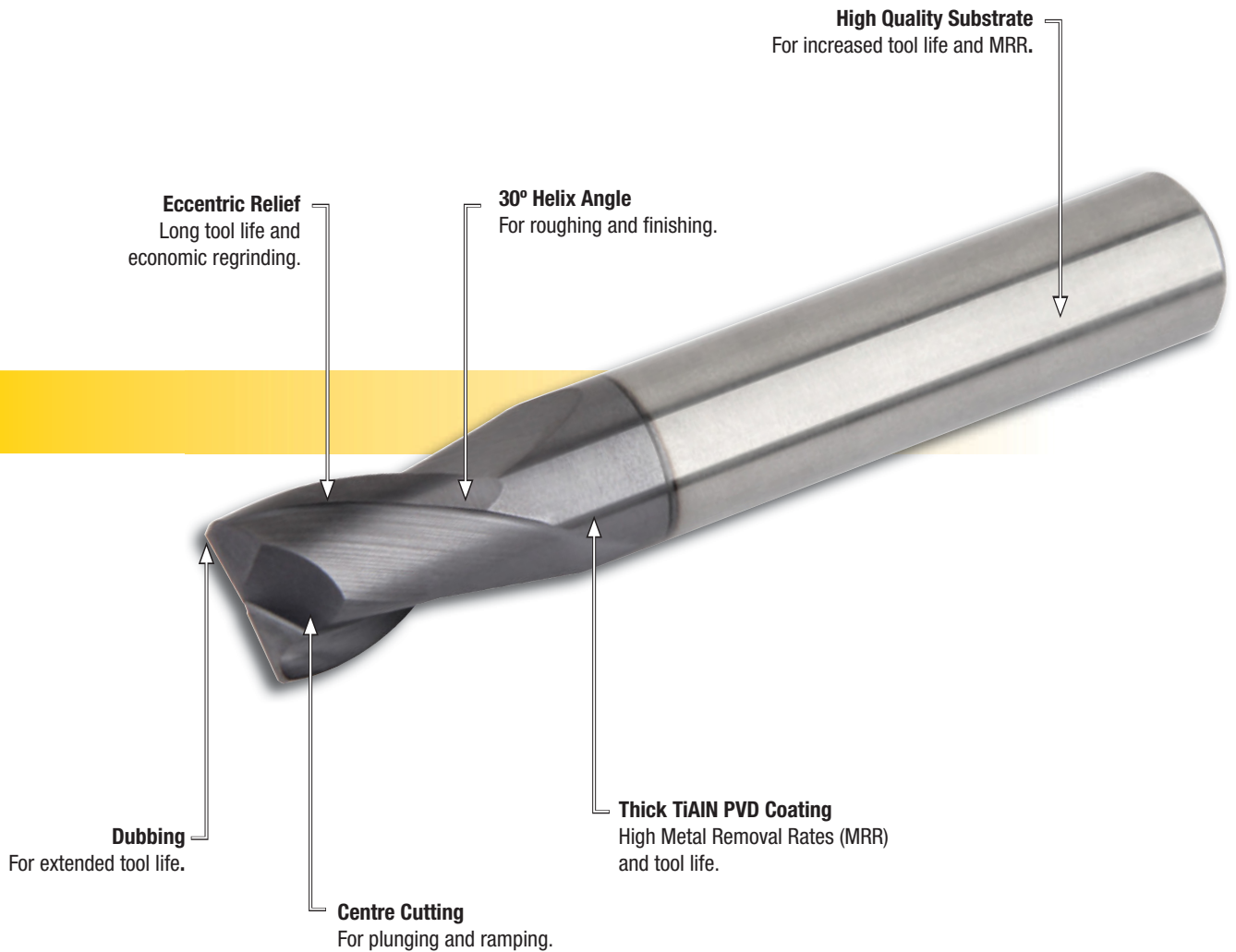
Customisation

- Intermediate diameters available.

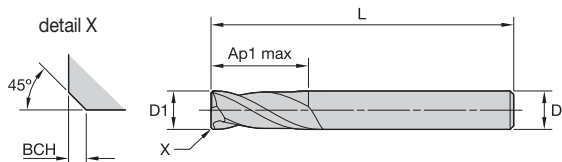
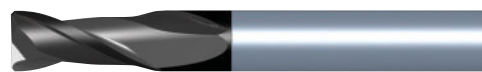
Extensive Standard Offering

- Diameter range 2–20mm.
- Chamfered edge and ball nose as standard offering.

Designed for roughing and finishing with one tool at a value price.



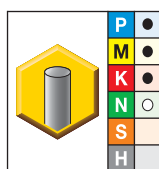
- Centre cutting.



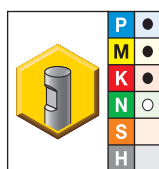
End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

■ 2CH..DK-DL • 2 Flute • Metric



grade KC633M

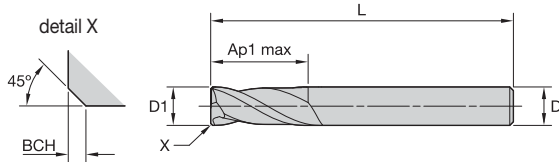
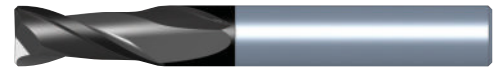
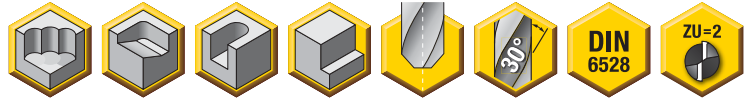


grade KC633M

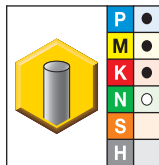
- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1	D	length of cut Ap1 max	length L	BCH
5872943	2CH0200DK003A	—	—	2,0	6	3,00	50	—
5872944	2CH0300DK004A	—	—	3,0	6	4,00	50	—
5872945	2CH0300DL007A	—	—	3,0	6	7,00	57	—
5872946	2CH0350DK004A	—	—	3,5	6	4,00	50	—
5872947	2CH0400DK005A	—	—	4,0	6	5,00	54	0,10
5872948	2CH0400DL008A	—	—	4,0	6	8,00	57	0,10
5872949	2CH0450DK005A	—	—	4,5	6	5,00	54	0,10
5872950	2CH0450DL008A	—	—	4,5	6	8,00	57	0,10
5872961	2CH0500DK006A	—	—	5,0	6	6,00	54	0,10
5872962	2CH0500DL010A	—	—	5,0	6	10,00	57	0,10
5872963	2CH0600DK007A	—	—	6,0	6	7,00	54	0,10
5872964	2CH0600DL010A	—	—	6,0	6	10,00	57	0,10
5872965	2CH0700DK008A	—	—	7,0	8	8,00	58	0,10
5872966	2CH0700DL013A	—	—	7,0	8	13,00	63	0,10
5872967	2CH0800DK009A	—	—	8,0	8	9,00	58	0,20
5872968	2CH0800DL016A	—	—	8,0	8	16,00	63	0,20
5872970	2CH0900DK010A	—	—	9,0	10	10,00	66	0,20
5872971	2CH0900DL016A	—	—	9,0	10	16,00	72	0,20
5872972	2CH1000DK011A	—	—	10,0	10	11,00	66	0,20
5872974	2CH1000DL019A	—	—	10,0	10	19,00	72	0,20
5872975	2CH1200DK012A	5872985	2CH1200DK012B	12,0	12	12,00	73	0,30
5872976	2CH1200DL022A	5872986	2CH1200DL022B	12,0	12	22,00	83	0,30
5872977	2CH1400DK014A	5872987	2CH1400DK014B	14,0	14	14,00	75	0,30
5872978	2CH1400DL022A	5872988	2CH1400DL022B	14,0	14	22,00	83	0,30
5872979	2CH1600DK016A	5872989	2CH1600DK016B	16,0	16	16,00	82	0,30
5872980	2CH1600DL026A	5872990	2CH1600DL026B	16,0	16	26,00	92	0,30
5872981	2CH1800DK018A	—	—	18,0	18	18,00	84	0,30
5872982	2CH1800DL026A	—	—	18,0	18	26,00	92	0,30
5872983	2CH2000DK020A	5872993	2CH2000DK020B	20,0	20	20,00	92	0,30
5872984	2CH2000DL032A	5872994	2CH2000DL032B	20,0	20	32,00	104	0,30

- Centre cutting.


End Mill Tolerances

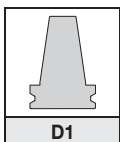
D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

2CH..DD • 2 Flute • Metric


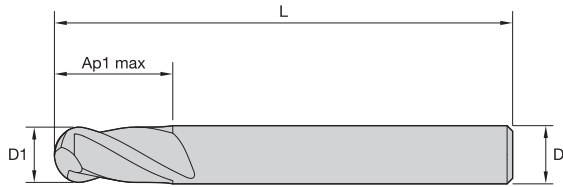
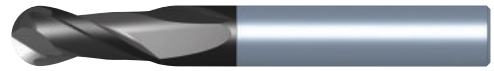
grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L	BCH
5872995	2CH0300DD007A	3,0	3	8,00	50	—
5872996	2CH0400DD008A	4,0	4	8,00	50	0,10
5872997	2CH0500DD010A	5,0	5	10,00	50	0,10
5872998	2CH0600DD010A	6,0	6	10,00	57	0,10
5872999	2CH0700DD013A	7,0	7	13,00	60	0,10
5873000	2CH0800DD016A	8,0	8	16,00	63	0,20
5873001	2CH0900DD016A	9,0	9	16,00	67	0,20
5873002	2CH1000DD019A	10,0	10	19,00	72	0,20
5873003	2CH1200DD022A	12,0	12	22,00	83	0,30
5873005	2CH1400DD022A	14,0	14	22,00	83	0,30
5873006	2CH1500DD026A	15,0	15	26,00	92	0,30
5873007	2CH1600DD026A	16,0	16	26,00	92	0,30
5873008	2CH1800DD026A	18,0	18	26,00	92	0,30
5873009	2CH2000DD032A	20,0	20	32,00	104	0,30



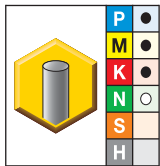
- Centre cutting.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

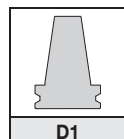
■ 2BN..DK-DL • 2 Flute • Ball Nose • Metric



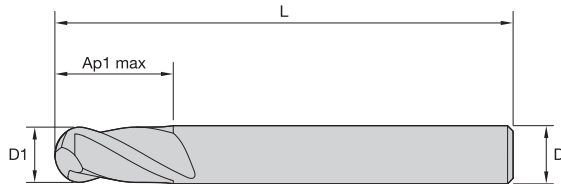
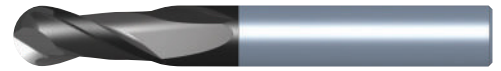
grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L
5874065	2BN0200DL006A	2,0	6	6,00	57
5874066	2BN0300DK004A	3,0	6	4,00	50
5874067	2BN0300DL007A	3,0	6	7,00	57
5874068	2BN0400DK005A	4,0	6	5,00	54
5874069	2BN0400DL008A	4,0	6	8,00	57
5874070	2BN0500DL010A	5,0	6	10,00	57
5874161	2BN0600DL010A	6,0	6	10,00	57
5874162	2BN0700DL013A	7,0	8	13,00	63
5874163	2BN0800DL016A	8,0	8	16,00	63
5874164	2BN1000DL019A	10,0	10	19,00	72
5874165	2BN1200DL022A	12,0	12	22,00	83
5874166	2BN1400DL022A	14,0	14	22,00	83
5874167	2BN1600DL026A	16,0	16	26,00	92
5874168	2BN2000DK020A	20,0	20	20,00	92
5874169	2BN2000DL032A	20,0	20	32,00	104



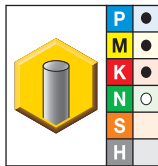
- Centre cutting.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

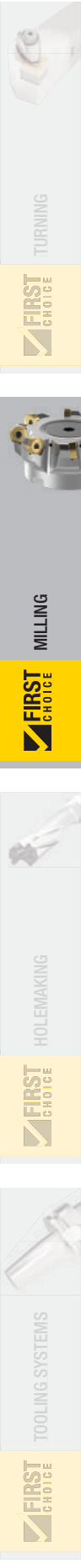
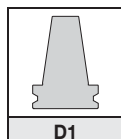
■ 2BN..DD • 2 Flute • Ball Nose • Metric



grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L
5874170	2BN0200DD007A	2,0	2	7,00	50
5874171	2BN0300DD007A	3,0	3	7,00	50
5874172	2BN0400DD008A	4,0	4	8,00	50
5874173	2BN0500DD010A	5,0	5	10,00	50
5874174	2BN0600DD010A	6,0	6	10,00	57
5874175	2BN0800DD016A	8,0	8	16,00	63
5874176	2BN1000DD019A	10,0	10	19,00	72
5874177	2BN1200DD022A	12,0	12	22,00	83
5874178	2BN1400DD022A	14,0	14	22,00	83
5874179	2BN1600DD026A	16,0	16	26,00	92
5874180	2BN2000DD032A	20,0	20	32,00	104



■ GOMill GP • 2CH..DK • 2 Flute • Short • Regular

Material Group																						
	Side Milling (A) and Slotting (B)		KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.																	
	A		B		Cutting Speed – vc m/min		D1 – Diameter															
	ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0				
P	0	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	1	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	2	Ap1 max	0,1 x D	0,5 x D	140	–	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	3	Ap1 max	0,1 x D	0,5 x D	120	–	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
M	4	Ap1 max	0,1 x D	0,5 x D	90	–	150	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088		
	1	Ap1 max	0,1 x D	0,5 x D	90	–	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
K	2	Ap1 max	0,1 x D	0,5 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081		
	1	Ap1 max	0,1 x D	0,5 x D	120	–	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
N	2	Ap1 max	0,1 x D	0,5 x D	110	–	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
	1	Ap1 max	0,1 x D	0,5 x D	250	–	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200		
	2	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160		
	4	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180		

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ GOMill GP • 2CH..DL-DD • 2 Flute • Long

Material Group																				
	Side Milling (A)		KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A).															
	A		Cutting Speed – vc m/min		D1 – Diameter															
	ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0				
P	0	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	1	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	2	Ap1 max	0,1 x D	140	–	190	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	3	Ap1 max	0,1 x D	120	–	160	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
M	4	Ap1 max	0,1 x D	90	–	150	fz	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088		
	1	Ap1 max	0,1 x D	90	–	115	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
K	2	Ap1 max	0,1 x D	60	–	80	fz	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081		
	1	Ap1 max	0,1 x D	120	–	150	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
N	2	Ap1 max	0,1 x D	110	–	140	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
	1	Ap1 max	0,1 x D	250	–	1000	fz	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200		
	2	Ap1 max	0,1 x D	250	–	750	fz	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160		
	4	Ap1 max	0,1 x D	250	–	750	fz	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180		

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ GOMill GP • 2BN..DK • 2 Flute • Ball Nose • Short • Regular

Material Group																					
	Side Milling (A) and Slotting (B)			KC633M			Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.														
	A		B	Cutting Speed – vc m/min			D1 – Diameter														
	ap	ae	ap	min	max	mm	1,0	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0		
P	0	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	1	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	Ap1 max	0,1 x D	0,5 x D	140	–	190	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	Ap1 max	0,1 x D	0,5 x D	120	–	160	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
M	4	Ap1 max	0,1 x D	0,5 x D	90	–	150	fz	0,005	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088
	1	Ap1 max	0,1 x D	0,5 x D	90	–	115	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
K	2	Ap1 max	0,1 x D	0,5 x D	60	–	80	fz	0,005	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
	1	Ap1 max	0,1 x D	0,5 x D	120	–	150	fz	0,007	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
N	2	Ap1 max	0,1 x D	0,5 x D	110	–	140	fz	0,006	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	1	Ap1 max	0,1 x D	0,5 x D	250	–	1000	fz	0,010	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200
	2	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,008	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160
	4	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,009	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ GOMill GP • 2BN..DL-DD • 2 Flute • Ball Nose • Long

Material Group																				
	Side Milling (A)			KC633M			Recommended feed per tooth (fz = mm/th) for side milling (A).													
	A		Cutting Speed – vc m/min	D1 – Diameter																
	ap	ae	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0			
P	0	Ap1 max	0,1 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	1	Ap1 max	0,1 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	2	Ap1 max	0,1 x D	140	–	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	3	Ap1 max	0,1 x D	120	–	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
M	4	Ap1 max	0,1 x D	90	–	150	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	
	1	Ap1 max	0,1 x D	90	–	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
K	2	Ap1 max	0,1 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	
	1	Ap1 max	0,1 x D	120	–	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
N	2	Ap1 max	0,1 x D	110	–	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
	1	Ap1 max	0,1 x D	250	–	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200	
	2	Ap1 max	0,1 x D	250	–	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160	
	4	Ap1 max	0,1 x D	250	–	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180	

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

➤ GOMILL™ GP General Purpose Solid Carbide End Mills • 3 Flute

Primary Application

The GOMILL GP series offers plunging, slotting, and profiling with long tool life on a wide range of materials. Designed to provide high Metal Removal Rates (MRR) and to achieve good surface conditions at excellent cost-benefit ratio. A wide range of diameters and lengths with chamfered edge are available from stock.

- Roughing and finishing with one tool.
- Excellent cost-benefit ratio.
- Multilayer KC633M™ grades for long tool life.



Features and Benefits

Advanced Technology

- Roughing and finishing with one tool reduces tool changes and unnecessary tooling inventory.
- Eccentric relief increases edge stability for longer tool life and better surface quality.
- Eccentric relief eases regrinding and enables higher flexibility and lower reconditioning cost.
- 3-flute design for maximum manufacturing flexibility.

Tailored Grade

- Universal multilayer KC633M coating for cutting steel, cast iron, and stainless steel (wet).

Customisation

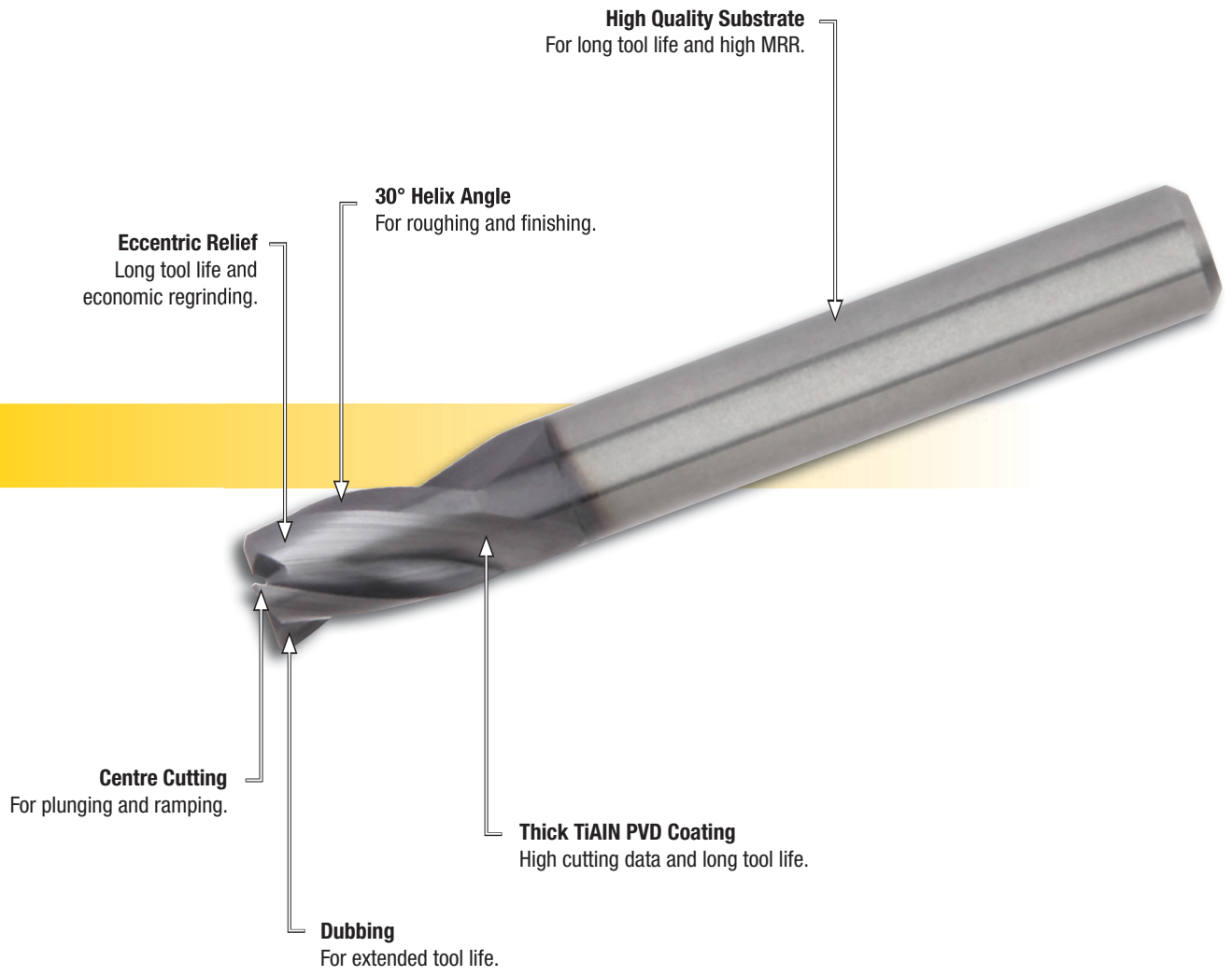
- Intermediate diameters available.

Extensive Standard Offering

- Diameter range 2–20mm.
- Chamfered edge as standard offering.
- Two different lengths as DIN standard in stock.



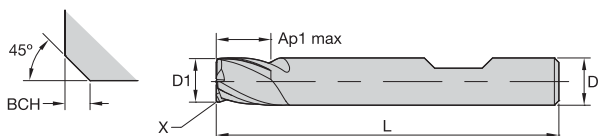
Designed for roughing and finishing with one tool at an economical price.



- Centre cutting.



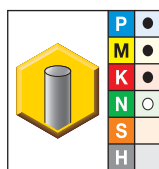
detail X



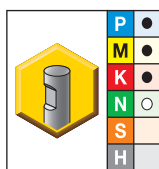
End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

■ 3CH..DK-DL • 3 Flute • Metric



grade KC633M



grade KC633M

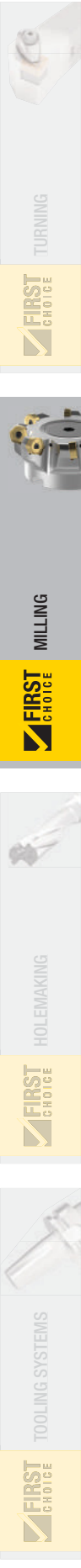
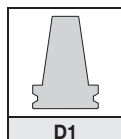
- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1	D	length of cut Ap1 max	length L	BCH
6146940	3CH0200DL006A	6146957	3CH0200DL006B	2,0	6	6,00	57	—
6146871	3CH0250DK003A	6146890	3CH0250DK003B	2,5	6	3,00	50	—
6146941	3CH0250DL007A	—	—	2,5	6	7,00	57	—
6146872	3CH0300DK004A	6146891	3CH0300DK004B	3,0	6	4,00	50	—
6146942	3CH0300DL007A	6146959	3CH0300DL007B	3,0	6	7,00	57	—
6146874	3CH0350DK004A	6146892	3CH0350DK004B	3,5	6	4,00	50	—
6146943	3CH0350DL007A	6146960	3CH0350DL007B	3,5	6	7,00	57	—
6146875	3CH0400DK005A	6146893	3CH0400DK005B	4,0	6	5,00	54	0,10
6146944	3CH0400DL008A	6146961	3CH0400DL008B	4,0	6	8,00	57	0,10
6146876	3CH0450DK005A	6146894	3CH0450DK005B	4,5	6	5,00	54	0,10
6146945	3CH0450DL008A	6146962	3CH0450DL008B	4,5	6	8,00	57	0,10
6146877	3CH0500DK006A	6146895	3CH0500DK006B	5,0	6	6,00	54	0,10
6146946	3CH0500DL010A	6146963	3CH0500DL010B	5,0	6	10,00	57	0,10
6146878	3CH0550DK007A	6146896	3CH0550DK007B	5,5	6	7,00	54	0,10
6146947	3CH0550DL010A	6146964	3CH0550DL010B	5,5	6	10,00	57	0,10
6146879	3CH0600DK007A	6146897	3CH0600DK007B	6,0	6	7,00	54	0,10
6146948	3CH0600DL010A	6146965	3CH0600DL010B	6,0	6	10,00	57	0,10
6146880	3CH0700DK008A	6146898	3CH0700DK008B	7,0	8	8,00	58	0,10
6146949	3CH0700DL013A	6146966	3CH0700DL013B	7,0	8	13,00	63	0,10
6146881	3CH0800DK009A	6146899	3CH0800DK009B	8,0	8	9,00	58	0,20
6146950	3CH0800DL016A	6146967	3CH0800DL016B	8,0	8	16,00	63	0,20
6146882	3CH1000DK011A	6146900	3CH1000DK011B	10,0	10	11,00	66	0,20
6146951	3CH1000DL019A	6146968	3CH1000DL019B	10,0	10	19,00	72	0,20
6146883	3CH1200DK012A	6146901	3CH1200DK012B	12,0	12	12,00	73	0,30
6146952	3CH1200DL022A	6146969	3CH1200DL022B	12,0	12	22,00	83	0,30
6146884	3CH1400DK014A	6146902	3CH1400DK014B	14,0	14	14,00	75	0,30
6146953	3CH1400DL022A	6146970	3CH1400DL022B	14,0	14	22,00	83	0,30
6146885	3CH1600DK016A	6146903	3CH1600DK016B	16,0	16	16,00	82	0,30
6146954	3CH1600DL026A	6146971	3CH1600DL026B	16,0	16	26,00	92	0,30
6146886	3CH1800DK018A	6146904	3CH1800DK018B	18,0	18	18,00	84	0,30
6146955	3CH1800DL026A	6146972	3CH1800DL026B	18,0	18	26,00	92	0,30
6146888	3CH2000DK020A	6146905	3CH2000DK020B	20,0	20	20,00	92	0,30
6146956	3CH2000DL032A	6146973	3CH2000DL032B	20,0	20	32,00	104	0,30

G0mill • GP 3CH..DK-DL • 3 Flute • Short • Regular

Material Group																				
	Side Milling (A) and Slotting (B)			KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.														
	A		B	Cutting Speed – vc m/min		D1 – Diameter														
	ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0		
P	0	Ap1 max	0,1 x D	0,5 x D	150	-	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	1	Ap1 max	0,1 x D	0,5 x D	150	-	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	Ap1 max	0,1 x D	0,5 x D	140	-	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	3	Ap1 max	0,1 x D	0,5 x D	120	-	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
M	1	Ap1 max	0,1 x D	0,5 x D	90	-	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
	2	Ap1 max	0,1 x D	0,5 x D	60	-	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081
K	1	Ap1 max	0,1 x D	0,5 x D	120	-	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114
	2	Ap1 max	0,1 x D	0,5 x D	110	-	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101
N	1	Ap1 max	0,1 x D	0,5 x D	250	-	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200
	2	Ap1 max	0,1 x D	0,5 x D	250	-	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160
	5	Ap1 max	0,1 x D	0,5 x D	250	-	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on diameters >12mm.



➤ G0mill™ GP General Purpose Solid Carbide End Mills • 4 Flute

Primary Application

The G0mill GP series offers plunging, slotting, and profiling with long tool life in a wide range of workpiece materials. These end mills are designed to provide high Metal Removal Rates (MRR) and to achieve good surface quality at an excellent cost-benefit ratio. A wide range of diameters and lengths are available with chamfered edge and ball nose as stocked standard.

- Roughing and finishing with one tool.
- Excellent cost-benefit ratio.
- Multilayer KC633M™ grades for long tool life.



Features and Benefits

Advanced Technology

- Roughing and finishing with one tool reduces tool changes and unnecessary tooling inventory.
- Eccentric relief increases edge stability for longer tool life and better surface quality.
- Eccentric relief eases regrinding and reduces reconditioning cost.
- 4-flute design for high MRR and reduced machining time.

Tailored Grades

- Universal multilayer KC633M coating for cutting steel, cast iron, and stainless steel (wet).

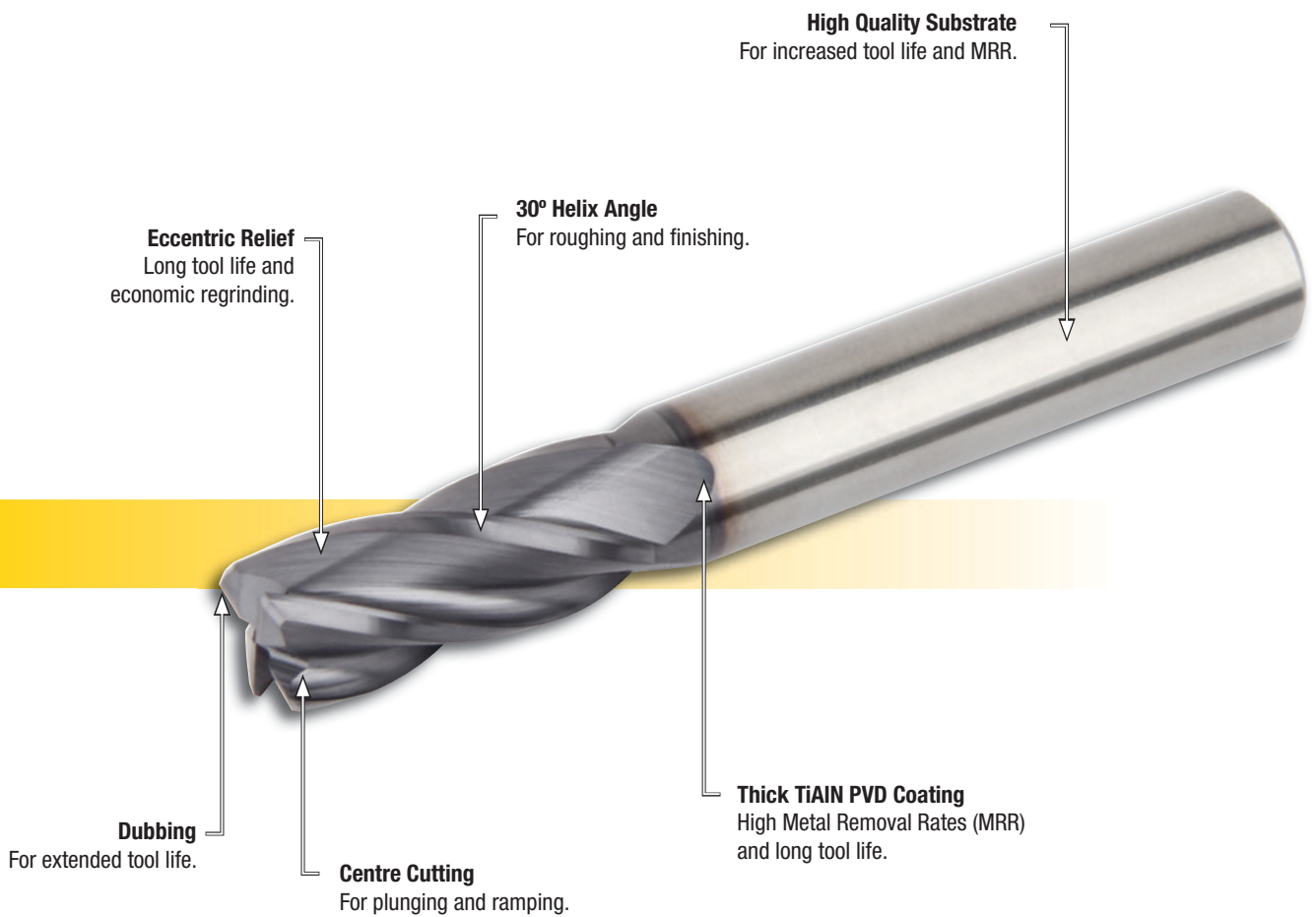
Customisation

- Intermediate diameters available.

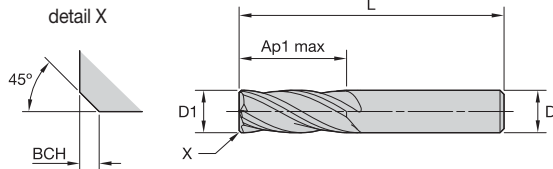
Extensive Standard Offering

- Diameter range 2–20mm.
- Chamfered edge and ball nose as standard offering.

Designed for roughing and finishing with one tool at a value price.



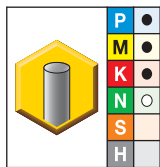
- Centre cutting.



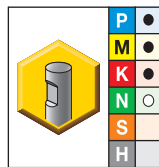
End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

■ 4CH..DK-DL • 4 Flute • Metric



grade KC633M

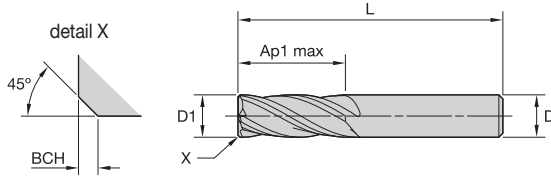


grade KC633M

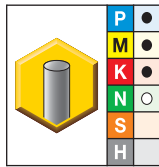
- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1	D	length of cut Ap1 max	length L	BCH
5824127	4CH0200DK004A	—	—	2,0	3	4,00	38	—
5824128	4CH0250DL008A	—	—	2,5	6	8,00	57	—
5824129	4CH0300DK005A	—	—	3,0	6	5,00	50	—
5824130	4CH0350DL010A	—	—	3,5	6	10,00	58	—
5824171	4CH0400DK008A	—	—	4,0	6	8,00	54	0,10
5824172	4CH0400DL011A	—	—	4,0	6	11,00	57	0,10
5824173	4CH0450DL011A	—	—	4,5	6	11,00	57	0,10
5824174	4CH0500DK009A	—	—	5,0	6	9,00	54	0,10
5824175	4CH0500DL013A	—	—	5,0	6	13,00	57	0,10
5824176	4CH0550DL013A	—	—	5,5	6	13,00	57	0,10
5824177	4CH0600DK010A	—	—	6,0	6	10,00	54	0,10
5824178	4CH0600DL013A	—	—	6,0	6	13,00	57	0,10
5824179	4CH0650DL016A	—	—	6,5	8	16,00	63	0,10
5824180	4CH0700DK011A	—	—	7,0	8	11,00	58	0,10
5824181	4CH0700DL016A	—	—	7,0	8	16,00	63	0,10
5824182	4CH0800DK012A	—	—	8,0	8	12,00	58	0,20
5824183	4CH0800DL019A	—	—	8,0	8	19,00	63	0,20
5824184	4CH0900DK013A	—	—	9,0	10	13,00	66	0,20
5824185	4CH0900DL019A	—	—	9,0	10	19,00	72	0,20
5824186	4CH1000DK014A	—	—	10,0	10	14,00	66	0,20
5824187	4CH1000DL022A	—	—	10,0	10	22,00	72	0,20
5824188	4CH1200DK016A	5824208	4CH1200DK016B	12,0	12	16,00	73	0,30
5824189	4CH1200DL026A	5824209	4CH1200DL026B	12,0	12	26,00	83	0,30
5824190	4CH1400DK018A	5824210	4CH1400DK018B	14,0	14	18,00	75	0,30
5824191	4CH1400DL026A	5824211	4CH1400DL026B	14,0	14	26,00	83	0,30
5824192	4CH1600DK022A	5824212	4CH1600DK022B	16,0	16	22,00	82	0,30
5824193	4CH1600DL032A	5824213	4CH1600DL032B	16,0	16	32,00	92	0,30
5824194	4CH1800DK024A	5824214	4CH1800DK024B	18,0	18	24,00	84	0,30
5824195	4CH1800DL032A	5824215	4CH1800DL032B	18,0	18	32,00	92	0,30
5824196	4CH2000DK026A	5824216	4CH2000DK026B	20,0	20	26,00	92	0,30
5824197	4CH2000DL038A	5824217	4CH2000DL038B	20,0	20	38,00	104	0,30

- Centre cutting.


End Mill Tolerances

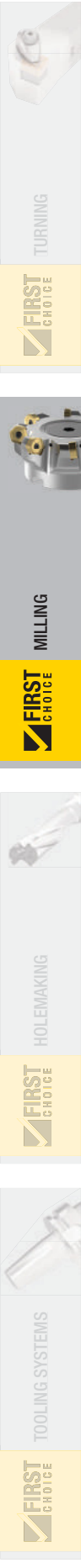
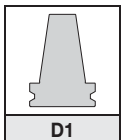
D1	tolerance e8	D	tolerance h6 + / -
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

4CH..DD • 4 Flute • Metric


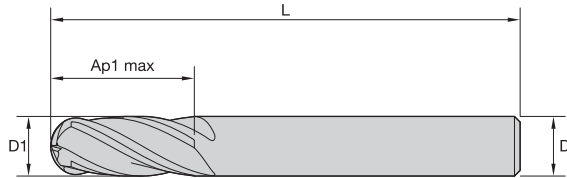
grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L	BCH
5824198	4CH0400DD011A	4,0	4	11,00	50	0,10
5824199	4CH0500DD013A	5,0	5	13,00	50	0,10
5824200	4CH0600DD013A	6,0	6	13,00	57	0,10
5824201	4CH0800DD019A	8,0	8	19,00	63	0,20
5824202	4CH1000DD022A	10,0	10	22,00	72	0,20
5824203	4CH1200DD026A	12,0	12	26,00	83	0,30
5824204	4CH1400DD026A	14,0	14	26,00	83	0,30
5824205	4CH1600DD032A	16,0	16	32,00	92	0,30
5824206	4CH1800DD032A	18,0	18	32,00	92	0,30
5824207	4CH2000DD038A	20,0	20	38,00	104	0,30



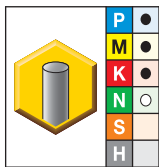
- Centre cutting.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

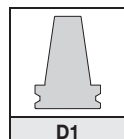
■ 4BN..DL • 4 Flute • Ball Nose • Metric



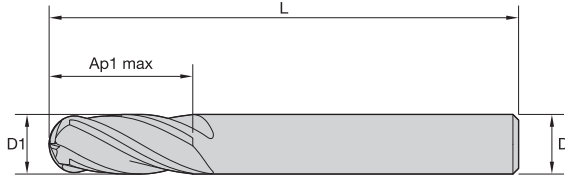
grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L
5824720	4BN0300DL008A	3,0	6	8,00	57
5824921	4BN0400DL011A	4,0	6	11,00	57
5824922	4BN0500DL013A	5,0	6	13,00	57
5824923	4BN0600DL013A	6,0	6	13,00	57
5824924	4BN0800DL019A	8,0	8	19,00	63
5824925	4BN1000DL022A	10,0	10	22,00	72
5824926	4BN1200DL026A	12,0	12	26,00	83
5824927	4BN1400DL026A	14,0	14	26,00	83
5824928	4BN1600DL032A	16,0	16	32,00	92
5824929	4BN1800DL032A	18,0	18	32,00	92
5824930	4BN2000DL038A	20,0	20	38,00	104



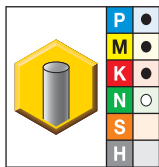
- Centre cutting.



End Mill Tolerances

D1	tolerance e8	D	tolerance h6 +/-
≤ 3	-0,014/-0,028	≤ 3	0/0,006
> 3-6	-0,020/-0,038	> 3-6	0/0,008
> 6-10	-0,025/-0,047	> 6-10	0/0,009
> 10-18	-0,032/-0,059	> 10-18	0/0,011
> 18-30	-0,040/-0,073	> 18-30	0/0,013

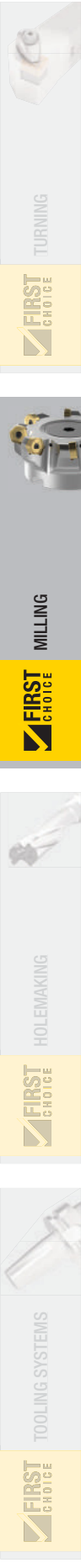
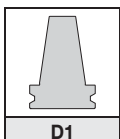
■ 4BN..DD • 4 Flute • Ball Nose • Metric



grade KC633M

- first choice
- alternate choice

order #	catalogue #	D1	D	length of cut Ap1 max	length L
5824931	4BN0400DD011A	4,0	4	11,00	50
5824932	4BN0500DD013A	5,0	5	13,00	50
5824933	4BN0600DD013A	6,0	6	13,00	57
5824934	4BN0800DD019A	8,0	8	19,00	63
5824935	4BN1000DD022A	10,0	10	22,00	72
5824936	4BN1200DD026A	12,0	12	26,00	83
5824937	4BN1400DD026A	14,0	14	26,00	83
5824938	4BN1600DD032A	16,0	16	32,00	92
5824939	4BN1800DD032A	18,0	18	32,00	92
5824940	4BN2000DD038A	20,0	20	38,00	104



■ GOMill GP • 4CH..DK • 4 Flute • Regular

Material Group																						
	Side Milling (A) and Slotting (B)				KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A). For slotting (B), reduce fz by 20%.															
	A		B		Cutting Speed – vc m/min		D1 – Diameter															
	ap	ae	ap	min	max	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0				
P	0	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	1	Ap1 max	0,1 x D	0,5 x D	150	–	200	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	2	Ap1 max	0,1 x D	0,5 x D	140	–	190	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
	3	Ap1 max	0,1 x D	0,5 x D	120	–	160	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
M	4	Ap1 max	0,1 x D	0,5 x D	90	–	150	fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088		
	1	Ap1 max	0,1 x D	0,5 x D	90	–	115	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
K	2	Ap1 max	0,1 x D	0,5 x D	60	–	80	fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081		
	1	Ap1 max	0,1 x D	0,5 x D	120	–	150	fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114		
N	2	Ap1 max	0,1 x D	0,5 x D	110	–	140	fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101		
	1	Ap1 max	0,1 x D	0,5 x D	250	–	1000	fz	0,020	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200		
	2	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,016	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160		
	4	Ap1 max	0,1 x D	0,5 x D	250	–	750	fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180		

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ GOMill GP • 4CH..DL-DD • 4 Flute • Long

Material Group																						
	Side Milling (A)				KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A).															
	A		Cutting Speed – vc m/min		D1 – Diameter																	
	ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0						
P	0	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114				
	1	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114				
	2	Ap1 max	0,1 x D	140	–	190	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114				
	3	Ap1 max	0,1 x D	120	–	160	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101				
M	4	Ap1 max	0,1 x D	90	–	150	fz	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088				
	1	Ap1 max	0,1 x D	90	–	115	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101				
K	2	Ap1 max	0,1 x D	60	–	80	fz	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081				
	1	Ap1 max	0,1 x D	120	–	150	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114				
N	2	Ap1 max	0,1 x D	110	–	140	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101				
	1	Ap1 max	0,1 x D	250	–	1000	fz	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200				
	2	Ap1 max	0,1 x D	250	–	750	fz	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160				
	4	Ap1 max	0,1 x D	250	–	750	fz	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180				

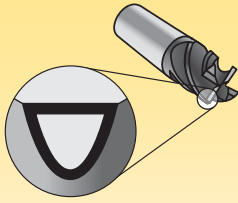
NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
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Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.

■ GOMill GP • 4BN..DL-DD • 4 Flute • Ball Nose • Long • Extra Long

Material Group																			
	Side Milling (A)		KC633M		Recommended feed per tooth (fz = mm/th) for side milling (A).														
	A		Cutting Speed – vc m/min		D1 – Diameter														
	ap	ae	min	max	mm	3,0	4,0	5,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0			
P	0	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	1	Ap1 max	0,1 x D	150	–	200	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	2	Ap1 max	0,1 x D	140	–	190	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
	3	Ap1 max	0,1 x D	120	–	160	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
M	4	Ap1 max	0,1 x D	90	–	150	fz	0,016	0,021	0,027	0,033	0,045	0,054	0,062	0,070	0,077	0,083	0,088	
	1	Ap1 max	0,1 x D	90	–	115	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
K	2	Ap1 max	0,1 x D	60	–	80	fz	0,014	0,019	0,024	0,029	0,040	0,048	0,056	0,063	0,070	0,076	0,081	
	1	Ap1 max	0,1 x D	120	–	150	fz	0,021	0,028	0,036	0,044	0,060	0,072	0,083	0,092	0,101	0,108	0,114	
N	2	Ap1 max	0,1 x D	110	–	140	fz	0,017	0,023	0,030	0,036	0,050	0,061	0,070	0,079	0,087	0,095	0,101	
	1	Ap1 max	0,1 x D	250	–	1000	fz	0,030	0,040	0,050	0,060	0,080	0,100	0,120	0,140	0,160	0,180	0,200	
	2	Ap1 max	0,1 x D	250	–	750	fz	0,024	0,032	0,040	0,048	0,064	0,080	0,096	0,112	0,128	0,144	0,160	
N	4	Ap1 max	0,1 x D	250	–	750	fz	0,027	0,036	0,045	0,054	0,072	0,090	0,108	0,126	0,144	0,162	0,180	

NOTE: Lower value of cutting speed is used for high stock removal applications or for higher hardness (machinability) within group.
 Higher value of cutting speed is used for finishing applications or for lower hardness (machinability) within group.
 Above parameters are based on ideal conditions. For smaller taper machining centres, please adjust parameters accordingly on >12mm diameter.





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

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

wear resistance ← → toughness

Grades	Coating	Grade Description	Material Hardness (HRC)																					
			05	10	15	20	25	30	35	40	45													
K600		Carbide grade made from high-quality, micrograin materials for cutting all types of workpiece materials. Very high toughness ensures a controlled wear rate. The micrograin structure enables extremely sharp cutting edges.																						
			N																					
KCPM15		Coated carbide grade with thick PVD coating and optimised chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC.																						
			P																					
			M																					
			K																					
KC643M		Coated fine-grain grade with PVD multilayer (AlTiN). KC643M™ is a very thin and hard PVD coating particularly suited for cutting steel, cast iron, stainless steel (wet), and titanium (wet). This grade can be used for materials with hardness up to 52 HRC.																						
			P																					
			M																					
			K																					
			S																					
KCSM15		Coated carbide grade with thick PVD coating and optimised chemistry and process for increased wear resistance. Outstanding protection in milling stainless steel to mitigate crater, DOCN (depth-of-cut notching), and flank wear. Excellent performance up to 52 HRC.																						
			S																					
			H																					
KC633M		Coated carbide grade with PVD multilayer coating. KC633M™ is designed for dry milling most types of material, apart from the hardened variety. This grade is characterised by good hardness and wear resistance. It provides outstanding protection for solid carbide tools against cratering and abrasion.																						
			P																					
			M																					
			K																					

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

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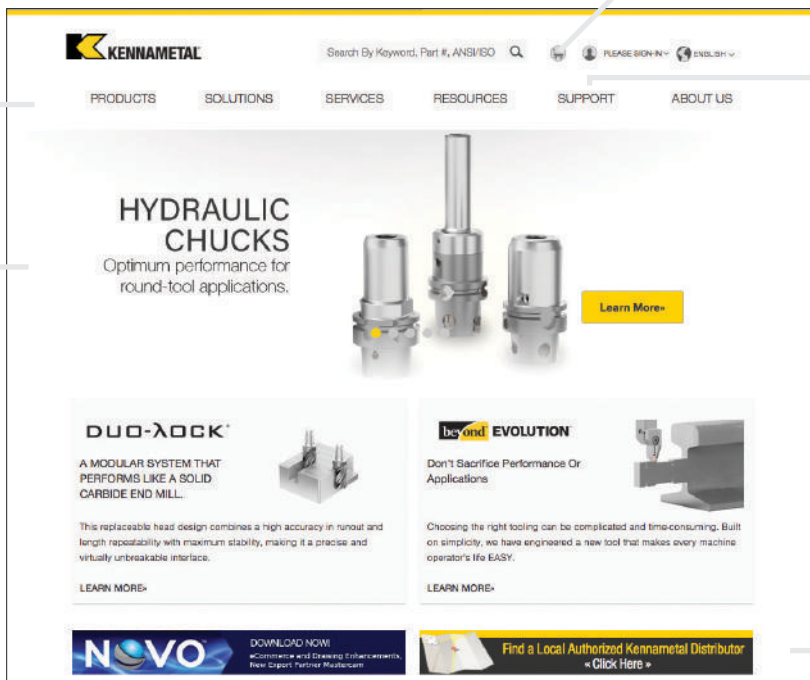
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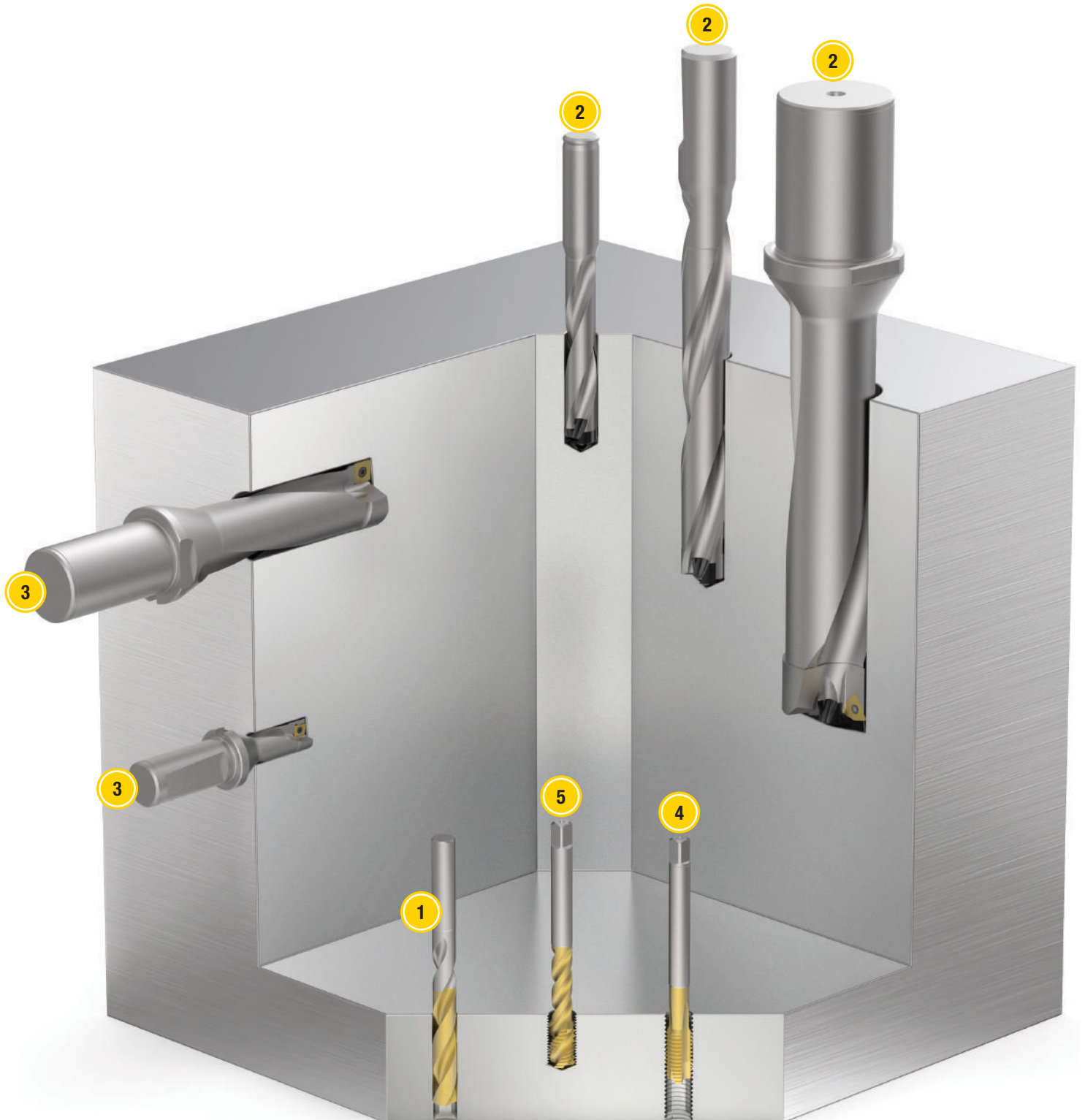
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Holemaking and Tapping



Holemaking

Choosing the Correct Solution	C2
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GOtap HSS-E — M3–M24 External Coolant	C107
Spiral-Flute Taps for Blind Holes	C108–C113
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Straight-Flute Taps for Blind and Through Holes for Short-Chipping Materials	C114–C119
4 5 HSS-E-PM High-Performance Taps — M4–M20 External and Internal Coolant	C116–C117
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Select the Correct Holemaking Solution for Your Application

Added Value for Your Performance

Increase of Productivity and Efficiency

- Material and application-specific solutions.
- Maximum metal removal rates and repeatability.
- Standardised design platforms for special tools based on “proven solutions” for individual optimisations and combination tools.

Control of Total Tooling Costs

- High tool utilisation through material and application-specific solutions.
- Process-safe regrinding service.
- Reduction of stocks through efficient modular concepts.
- Multiple platforms per application to achieve the most cost-efficient solution.

Solid Drilling

diameter		hourly rate			
		high to normal	normal (M/C)	normal to low	low (rough)
mm	inch	precision			
		IT8	IT9	IT10	IT11
1,0	0.0393	<p>Solid Carbide Drills</p>	<p>Modular Drills KenTIP™ FS KSEM™</p>	<p>Drill Fix DFR™</p>	<p>Drill Fix DFSP™</p>
3,0	0.1181				
6,0	0.2362				
9,0	0.3543				
12,0	0.4724				
15,0	0.5906				
18,0	0.7087				
21,0	0.8268				
24,0	0.9449				
27,0	1.0630				
30,0	1.1811				
33,0	1.2992				
36,0	1.4173				
39,0	1.5354				
42,0	1.6535				
45,0	1.7717				
48,0	1.8898				
51,0	2.0079				
54,0	2.1260				
57,0	2.2441				
60,0	2.3622				
70,0	2.7559				
80,0	3.1496				
90,0	3.5433				
			<p>Modular Drills KSEM PLUS™</p>		

Choose solid carbide drills for:




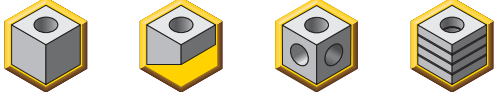





- Small to medium diameters.
- 3 x D, 5 x D, and 8 x D.
- High metal removal rates, productivity.
- High precision.
- Dry, flood, and through coolant, and MQL machining.
- If reconditioning is manageable.

Choose modular drills for:




- Medium to large diameters.
- Drilling depth from 3 x D–10 x D.
- High productivity and great hole quality.
- Lowering direct tooling cost and creating a smaller tool inventory.
- Improve process stability by using indexable drill bits.

Choose indexable drills for:

- Medium to large diameter range.
- Short hole applications, 2 x D and 3 x D.
- Very cost-effective drilling using standard indexable inserts.
- Materials and machine setups that do not allow for high feed rates.

		G0drill™ 	KU Drill 
Diameter		1–20mm (.03942–.7874")	3–20mm (.1181–.7874")
Capabilities			
Coolant options			
			
Materials	P	●	●
	M	●	○
	K	●	●
	N	●	●
	S	●	○
Cutting parameters		+	++
Hole quality/tolerance		+	++
Versatile Solid Carbide Drills Kennametal versatile drills are targeted to end users with the need for long tool life in many materials, versatility, and saving time for tool changes, and reducing the capital spent on a variety of SC drill styles on the shelf.		The G0drill™ is a multi-material drill. It addresses drilling operations in a diameter range of 1–20mm in a broad variety of materials and applications, such as fuel systems or medical components. Due to its very unique design, the G0drill expands the advantages of modular drills into the small diameter range, enabling the full utilisation of the drill's tool life capacity.	The Kenna Universal™ drill is a multipurpose drill. It is engineered to deliver superior performance in steel, cast iron, and stainless steel applications, making it ideal for small- and medium-sized shops. The universal application profile reduces tool change times and the number of drills in inventory. Covering a large spectrum of off-the-shelf diameters and a broad range of applications makes Kenna Universal drills an excellent alternative to other high-performance products.
Regrindability		limited Reconditioning of a G0drill < Ø4mm is not as cost-effective as a new drill, and therefore not recommended. Because of its unique design, it is technically impossible to regrind the G0drill to its original shape.	fully regrindable The KU Drill can be reconditioned to original shape and coating.

Tool Selection Guide

	Drill Series	grade	standard						hole tolerance	First Choice Range		drilling depth L/D1	
			● first choice ○ alternate choice							diameter range			
			P	M	K	N	S	H		D1 mm min–max	D1 inch min–max		
Solid Carbide Drills — for highest cutting parameters, highest precision in small to medium diameter range, regrindable													
Solid Carbide Drills for external coolant or dry machining													
	G0drill™ for Multiple Materials	B04_CPG	KC7325	●	●	●	●	●	○	IT9–IT10	1,0–20,0	.0394–.7874	3 x D 5 x D
Solid Carbide Drills with internal coolant channel													
	G0drill™ for Multiple Materials	B05_CPG	KC7325	●	●	●	●	●	○	IT9–IT10	1,5–20,0	.0591–.7874	3 x D 5 x D
	KU Drill for Universal Applications	B97_	KC7315	●	○	●	○	○			3,0–20,0	.1181–.7874	3 x D 5 x D 8 x D

*Not all intermediate sizes available in First Choice.



G0drill™

For Multiple Materials

Primary Application

The G0drill platform addresses drilling operations in a diameter range of 1–20mm in a broad variety of materials and applications such as fuel systems or medical components. Due to its very unique design, the G0drill platform expands the advantages of modular drills into the small diameter range: high-end grades, wear-indicator coating, and new, proprietary geometries enable full utilisation of the drill's tool life capacity. The G0drill platform qualifies as a very cost-effective, throwaway-type tool in the given diameter range.

Features and Benefits

G0drill Design

- Marginless design for reduced friction and heat — thus longer tool life.
- Very versatile tool works in a wide range of materials.
- Cost-effective, no regrind logistics.
- No setup.
- Throw away or recycle.
- Through-coolant option down to diameter 1mm.
- Good hole quality, roundness, and cylindricity for all materials.

CPG Point

- Optimised gashing design for microdrilling ensures free flow of chips in the centre of the drill.
- Excellent centring capabilities.
- Reduced axial forces.
- Uninterrupted straight cutting lip allows no starting point for wear and enables even distribution of cutting forces for longer tool life in all materials and less chipping on cutting edge.

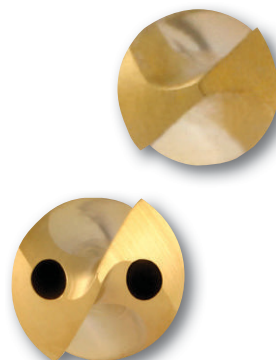
The high-performance solid carbide drill tailored for very small- to medium-diameter drilling applications.

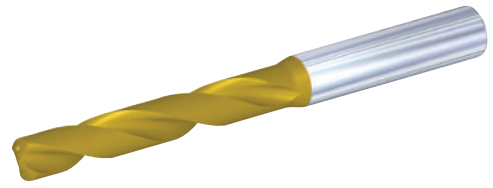
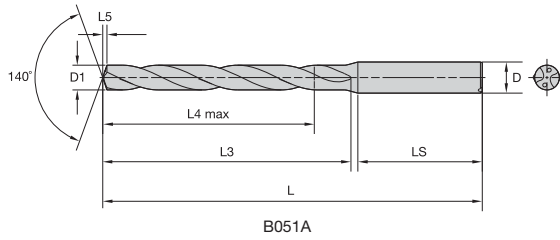
KC7325™ Grade

The grade contains a double coating:

- The multilayer, TiAlN-based coating with high hot hardness enables the drill to run at high cutting speeds as well as in MQL applications.
- A TiN top layer serves as wear indicator for easier monitoring on small drills, which can be difficult to see.
- Improved visibility of wear helps to utilise the tool's full tool life capacity.

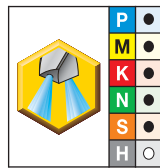
For standard line items with F-shank, please refer to the Master Catalogue 2018 or to the e-catalogue on kennametal.com.





B051A

■ B041A/B051A • ~3 x D

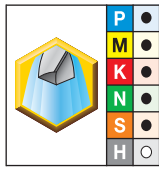


- first choice
- alternate choice

grade KC7325		grade KC7325		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	order #	catalogue #	mm	in						
4151623	B041A01000CPG	—	—	1,000	.0394	58	7	5	0,2	28	4
4151628	B041A01100CPG	—	—	1,100	.0433	58	7	5	0,2	28	4
4151631	B041A01200CPG	—	—	1,200	.0472	58	7	5	0,2	28	4
4151632	B041A01300CPG	—	—	1,300	.0512	58	7	5	0,2	28	4
4151633	B041A01321CPG	—	—	1,321	.0520	58	7	5	0,2	28	4
4151635	B041A01400CPG	—	—	1,400	.0551	58	7	5	0,2	28	4
4151636	B041A01500CPG	4148804	B051A01500CPG	1,500	.0591	58	9	6	0,2	28	4
4151637	B041A01600CPG	—	—	1,600	.0630	58	9	6	0,3	28	4
4151638	B041A01700CPG	4148806	B051A01700CPG	1,700	.0669	58	9	6	0,3	28	4
4151639	B041A01800CPG	—	—	1,800	.0709	58	9	6	0,3	28	4
4151640	B041A01900CPG	—	—	1,900	.0748	58	9	6	0,3	28	4
4151642	B041A02000CPG	4124962	B051A02000CPG	2,000	.0787	58	13	10	0,3	28	4
4151643	B041A02100CPG	4148810	B051A02100CPG	2,100	.0827	58	13	10	0,3	28	4
4151644	B041A02200CPG	4148811	B051A02200CPG	2,200	.0866	58	13	10	0,4	28	4
4151645	B041A02300CPG	4148812	B051A02300CPG	2,300	.0906	58	13	10	0,4	28	4
4151646	B041A02383CPG	—	—	2,383	.0938	58	17	12	0,4	28	4
4151647	B041A02400CPG	4148844	B051A02400CPG	2,400	.0945	58	17	12	0,4	28	4
4151648	B041A02439CPG	—	—	2,439	.0960	58	17	12	0,4	28	4
4151649	B041A02489CPG	4148846	B051A02489CPG	2,489	.0980	58	17	12	0,4	28	4
4151650	B041A02500CPG	4148847	B051A02500CPG	2,500	.0984	58	17	12	0,4	28	4
4151651	B041A02578CPG	4148848	B051A02578CPG	2,578	.1015	58	17	12	0,4	28	4
4151652	B041A02600CPG	4148849	B051A02600CPG	2,600	.1024	58	17	12	0,4	28	4
4151653	B041A02642CPG	—	—	2,642	.1040	58	17	12	0,4	28	4
4151654	B041A02700CPG	4148851	B051A02700CPG	2,700	.1063	58	17	12	0,4	28	4
—	—	4148853	B051A02779CPG	2,779	.1094	58	17	12	0,5	28	4
4151657	B041A02800CPG	4148854	B051A02800CPG	2,800	.1102	58	17	12	0,5	28	4
4151658	B041A02820CPG	—	—	2,820	.1110	58	17	12	0,5	28	4
4151659	B041A02870CPG	—	—	2,870	.1130	58	17	12	0,5	28	4
4151660	B041A02900CPG	4148857	B051A02900CPG	2,900	.1142	58	17	12	0,5	28	4
4150155	B041A03000CPG	4151081	B051A03000CPG	3,000	.1181	62	20	14	0,5	36	6
4150156	B041A03048CPG	4151082	B051A03048CPG	3,048	.1200	62	20	14	0,5	36	6
4150157	B041A03100CPG	—	—	3,100	.1220	62	20	14	0,5	36	6

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(B041A/B051A • -3 x D – continued)



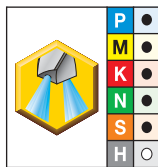
● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150158	B041A03175CPG	—	—	3,175	.1250	62	20	14	0,5	36	6
4150159	B041A03200CPG	4121528	B051A03200CPG	3,200	.1260	62	20	14	0,5	36	6
4150160	B041A03264CPG	—	—	3,264	.1285	62	20	14	0,5	36	6
4150161	B041A03300CPG	4151106	B051A03300CPG	3,300	.1299	62	20	14	0,5	36	6
4150162	B041A03400CPG	4151107	B051A03400CPG	3,400	.1339	62	20	14	0,6	36	6
4150183	B041A03455CPG	—	—	3,455	.1360	62	20	14	0,6	36	6
4150184	B041A03500CPG	4151109	B051A03500CPG	3,500	.1378	62	20	14	0,6	36	6
4150186	B041A03600CPG	4151111	B051A03600CPG	3,600	.1417	62	20	14	0,6	36	6
4150188	B041A03700CPG	4151113	B051A03700CPG	3,700	.1457	62	20	14	0,6	36	6
—	—	4151114	B051A03734CPG	3,734	.1470	62	20	14	0,6	36	6
4150190	B041A03800CPG	4151115	B051A03800CPG	3,800	.1496	66	24	17	0,6	36	6
4150191	B041A03900CPG	4151116	B051A03900CPG	3,900	.1535	66	24	17	0,6	36	6
4150192	B041A03970CPG	4151117	B051A03970CPG	3,970	.1563	66	24	17	0,7	36	6
4150193	B041A04000CPG	4121529	B051A04000CPG	4,000	.1575	66	24	17	0,7	36	6
4150194	B041A04039CPG	—	—	4,039	.1590	66	24	17	0,7	36	6
4150196	B041A04100CPG	4151120	B051A04100CPG	4,100	.1614	66	24	17	0,7	36	6
4150197	B041A04200CPG	4151121	B051A04200CPG	4,200	.1654	66	24	17	0,7	36	6
4150199	B041A04300CPG	4151123	B051A04300CPG	4,300	.1693	66	24	17	0,7	36	6
4150201	B041A04400CPG	4151125	B051A04400CPG	4,400	.1732	66	24	17	0,7	36	6
4150202	B041A04500CPG	4151126	B051A04500CPG	4,500	.1772	66	24	17	0,7	36	6
4150203	B041A04600CPG	—	—	4,600	.1811	66	24	17	0,8	36	6
—	—	4151128	B051A04623CPG	4,623	.1820	66	24	17	0,8	36	6
4150205	B041A04700CPG	4151129	B051A04700CPG	4,700	.1850	66	24	17	0,8	36	6
4150206	B041A04763CPG	4151130	B051A04763CPG	4,763	.1875	66	28	20	0,8	36	6
4150207	B041A04800CPG	4151131	B051A04800CPG	4,800	.1890	66	28	20	0,8	36	6
4150209	B041A04900CPG	4151133	B051A04900CPG	4,900	.1929	66	28	20	0,8	36	6
4150210	B041A05000CPG	4151134	B051A05000CPG	5,000	.1969	66	28	20	0,8	36	6
4150211	B041A05100CPG	4151135	B051A05100CPG	5,100	.2008	66	28	20	0,9	36	6
4150212	B041A05106CPG	—	—	5,106	.2010	66	28	20	0,9	36	6
4150214	B041A05200CPG	4151138	B051A05200CPG	5,200	.2047	66	28	20	0,9	36	6
4150215	B041A05300CPG	4151139	B051A05300CPG	5,300	.2087	66	28	20	0,9	36	6
4150216	B041A05400CPG	4151140	B051A05400CPG	5,400	.2126	66	28	20	0,9	36	6
4150218	B041A05500CPG	4151142	B051A05500CPG	5,500	.2165	66	28	20	0,9	36	6
4150219	B041A05558CPG	4151143	B051A05558CPG	5,558	.2188	66	28	20	0,9	36	6
4150220	B041A05600CPG	4151144	B051A05600CPG	5,600	.2205	66	28	20	0,9	36	6
4150222	B041A05700CPG	4151146	B051A05700CPG	5,700	.2244	66	28	20	1,0	36	6
4150223	B041A05800CPG	4151147	B051A05800CPG	5,800	.2283	66	28	20	1,0	36	6
4150224	B041A05900CPG	—	—	5,900	.2323	66	28	20	1,0	36	6
—	—	4151148	B051A05954CPG	5,954	.2344	66	28	20	1,0	36	6
4150226	B041A06000CPG	4121534	B051A06000CPG	6,000	.2362	66	28	20	1,0	36	6
4150227	B041A06100CPG	4151149	B051A06100CPG	6,100	.2402	79	34	24	1,0	36	8
4150228	B041A06200CPG	—	—	6,200	.2441	79	34	24	1,0	36	8
4150229	B041A06300CPG	—	—	6,300	.2480	79	34	24	1,1	36	8
4150230	B041A06350CPG	4151152	B051A06350CPG	6,350	.2500	79	34	24	1,1	36	8
4150231	B041A06400CPG	4151153	B051A06400CPG	6,400	.2520	79	34	24	1,1	36	8
4150232	B041A06500CPG	4151154	B051A06500CPG	6,500	.2559	79	34	24	1,1	36	8
4150233	B041A06528CPG	4151155	B051A06528CPG	6,528	.2570	79	34	24	1,1	36	8
4150234	B041A06600CPG	4151156	B051A06600CPG	6,600	.2598	79	34	24	1,1	36	8

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(B041A/B051A • -3 x D — continued)

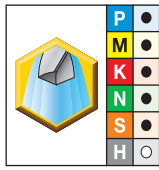


● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150236	B041A06700CPG	4151158	B051A06700CPG	6,700	.2638	79	34	24	1,1	36	8
4150237	B041A06746CPG	4151159	B051A06746CPG	6,746	.2656	79	34	24	1,1	36	8
4150238	B041A06800CPG	4151160	B051A06800CPG	6,800	.2677	79	34	24	1,1	36	8
4150239	B041A06900CPG	4151161	B051A06900CPG	6,900	.2717	79	34	24	1,2	36	8
4150240	B041A07000CPG	4151162	B051A07000CPG	7,000	.2756	79	34	24	1,2	36	8
4150241	B041A07100CPG	4151163	B051A07100CPG	7,100	.2795	79	41	29	1,2	36	8
4150242	B041A07145CPG	4151164	B051A07145CPG	7,145	.2813	79	41	29	1,2	36	8
4150243	B041A07200CPG	4151165	B051A07200CPG	7,200	.2835	79	41	29	1,2	36	8
4150244	B041A07300CPG	—	—	7,300	.2874	79	41	29	1,2	36	8
4150245	B041A07400CPG	4151167	B051A07400CPG	7,400	.2913	79	41	29	1,3	36	8
4150246	B041A07500CPG	4151168	B051A07500CPG	7,500	.2953	79	41	29	1,3	36	8
4150247	B041A07541CPG	—	—	7,541	.2969	79	41	29	1,3	36	8
4150248	B041A07600CPG	—	—	7,600	.2992	79	41	29	1,3	36	8
4150249	B041A07700CPG	4151171	B051A07700CPG	7,700	.3031	79	41	29	1,3	36	8
4150250	B041A07800CPG	4151172	B051A07800CPG	7,800	.3071	79	41	29	1,3	36	8
4150251	B041A07900CPG	4151173	B051A07900CPG	7,900	.3110	79	41	29	1,3	36	8
4150252	B041A07938CPG	—	—	7,938	.3125	79	41	29	1,3	36	8
4150253	B041A08000CPG	4151175	B051A08000CPG	8,000	.3150	79	41	29	1,4	36	8
4150254	B041A08100CPG	4151176	B051A08100CPG	8,100	.3189	89	47	35	1,4	40	10
4150255	B041A08200CPG	4151177	B051A08200CPG	8,200	.3228	89	47	35	1,4	40	10
4150256	B041A08300CPG	4151178	B051A08300CPG	8,300	.3268	89	47	35	1,4	40	10
—	—	4151179	B051A08334CPG	8,334	.3281	89	47	35	1,4	40	10
4150258	B041A08400CPG	4151180	B051A08400CPG	8,400	.3307	89	47	35	1,4	40	10
4150259	B041A08433CPG	—	—	8,433	.3320	89	47	35	1,4	40	10
4150260	B041A08500CPG	4151182	B051A08500CPG	8,500	.3346	89	47	35	1,4	40	10
4150261	B041A08600CPG	4151183	B051A08600CPG	8,600	.3386	89	47	35	1,5	40	10
4150262	B041A08700CPG	4151184	B051A08700CPG	8,700	.3425	89	47	35	1,5	40	10
4150264	B041A08800CPG	4151186	B051A08800CPG	8,800	.3465	89	47	35	1,5	40	10
4150265	B041A08900CPG	4151187	B051A08900CPG	8,900	.3504	89	47	35	1,5	40	10
4150266	B041A09000CPG	4151188	B051A09000CPG	9,000	.3543	89	47	35	1,5	40	10
4150267	B041A09100CPG	4151189	B051A09100CPG	9,100	.3583	89	47	35	1,6	40	10
4150269	B041A09200CPG	—	—	9,200	.3622	89	47	35	1,6	40	10
4150270	B041A09300CPG	4151192	B051A09300CPG	9,300	.3661	89	47	35	1,6	40	10
4150272	B041A09400CPG	4151194	B051A09400CPG	9,400	.3701	89	47	35	1,6	40	10
4150273	B041A09500CPG	4151195	B051A09500CPG	9,500	.3740	89	47	35	1,6	40	10
4150274	B041A09525CPG	—	—	9,525	.3750	89	47	35	1,6	40	10
4150275	B041A09600CPG	4151197	B051A09600CPG	9,600	.3780	89	47	35	1,6	40	10
4150276	B041A09700CPG	4151198	B051A09700CPG	9,700	.3819	89	47	35	1,7	40	10
4150277	B041A09800CPG	4151199	B051A09800CPG	9,800	.3858	89	47	35	1,7	40	10
4150278	B041A09900CPG	4151200	B051A09900CPG	9,900	.3898	89	47	35	1,7	40	10
4150279	B041A09921CPG	—	—	9,921	.3906	89	47	35	1,7	40	10
4150176	B041A10000CPG	4151202	B051A10000CPG	10,000	.3937	89	47	35	1,7	40	10
4150177	B041A10100CPG	4151203	B051A10100CPG	10,100	.3976	102	55	40	1,7	45	12
4150178	B041A10200CPG	4150456	B051A10200CPG	10,200	.4016	102	55	40	1,7	45	12
4150179	B041A10300CPG	4150457	B051A10300CPG	10,300	.4055	102	55	40	1,8	45	12
4150180	B041A10320CPG	—	—	10,320	.4063	102	55	40	1,8	45	12
4150181	B041A10400CPG	4150459	B051A10400CPG	10,400	.4094	102	55	40	1,8	45	12
4150182	B041A10500CPG	4150460	B051A10500CPG	10,500	.4134	102	55	40	1,8	45	12

(continued)

(B041A/B051A • -3 x D – continued)



● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150293	B041A10600CPG	4150461	B051A10600CPG	10,600	.4173	102	55	40	1,8	45	12
4150294	B041A10700CPG	—	—	10,700	.4213	102	55	40	1,8	45	12
4150296	B041A10800CPG	4151214	B051A10800CPG	10,800	.4252	102	55	40	1,9	45	12
4150297	B041A10900CPG	4151215	B051A10900CPG	10,900	.4291	102	55	40	1,9	45	12
4150298	B041A11000CPG	4151216	B051A11000CPG	11,000	.4331	102	55	40	1,9	45	12
4150299	B041A11100CPG	4151217	B051A11100CPG	11,100	.4370	102	55	40	1,9	45	12
4150301	B041A11200CPG	—	—	11,200	.4409	102	55	40	1,9	45	12
4150302	B041A11300CPG	—	—	11,300	.4449	102	55	40	1,9	45	12
4150303	B041A11400CPG	—	—	11,400	.4488	102	55	40	2,0	45	12
4150304	B041A11500CPG	4151222	B051A11500CPG	11,500	.4528	102	55	40	2,0	45	12
4150306	B041A11600CPG	4151224	B051A11600CPG	11,600	.4567	102	55	40	2,0	45	12
4150307	B041A11700CPG	4151225	B051A11700CPG	11,700	.4606	102	55	40	2,0	45	12
4150308	B041A11800CPG	4151226	B051A11800CPG	11,800	.4646	102	55	40	2,0	45	12
4150309	B041A11900CPG	—	—	11,900	.4685	102	55	40	2,0	45	12
4150311	B041A12000CPG	4151229	B051A12000CPG	12,000	.4724	102	55	40	2,1	45	12
4150312	B041A12100CPG	4151230	B051A12100CPG	12,100	.4764	107	60	43	2,1	45	14
4150313	B041A12200CPG	4151231	B051A12200CPG	12,200	.4803	107	60	43	2,1	45	14
4150314	B041A12300CPG	4151232	B051A12300CPG	12,300	.4843	107	60	43	2,1	45	14
4150316	B041A12400CPG	—	—	12,400	.4882	107	60	43	2,1	45	14
4150317	B041A12500CPG	4151235	B051A12500CPG	12,500	.4921	107	60	43	2,2	45	14
4150318	B041A12600CPG	4151236	B051A12600CPG	12,600	.4961	107	60	43	2,2	45	14
4150319	B041A12700CPG	4151237	B051A12700CPG	12,700	.5000	107	60	43	2,2	45	14
4150320	B041A12800CPG	4151238	B051A12800CPG	12,800	.5039	107	60	43	2,2	45	14
4150321	B041A12900CPG	—	—	12,900	.5079	107	60	43	2,2	45	14
4150322	B041A13000CPG	4151240	B051A13000CPG	13,000	.5118	107	60	43	2,2	45	14
4150324	B041A13100CPG	—	—	13,100	.5157	107	60	43	2,3	45	14
4150326	B041A13300CPG	—	—	13,300	.5236	107	60	43	2,3	45	14
4150328	B041A13500CPG	4151246	B051A13500CPG	13,500	.5315	107	60	43	2,3	45	14
4150329	B041A13600CPG	—	—	13,600	.5354	107	60	43	2,3	45	14
4150330	B041A13700CPG	—	—	13,700	.5394	107	60	43	2,4	45	14
4150331	B041A13800CPG	—	—	13,800	.5433	107	60	43	2,4	45	14
4150334	B041A14000CPG	4121491	B051A14000CPG	14,000	.5512	107	60	43	2,4	45	14
4150335	B041A14100CPG	—	—	14,100	.5551	115	65	45	2,4	48	16
4150336	B041A14200CPG	4151253	B051A14200CPG	14,200	.5591	115	65	45	2,5	48	16
4150338	B041A14300CPG	4151255	B051A14300CPG	14,300	.5630	115	65	45	2,5	48	16
4150340	B041A14500CPG	4151257	B051A14500CPG	14,500	.5709	115	65	45	2,5	48	16
4150341	B041A14600CPG	—	—	14,600	.5748	115	65	45	2,5	48	16
4150343	B041A14700CPG	—	—	14,700	.5787	115	65	45	2,5	48	16
4150344	B041A14800CPG	4151261	B051A14800CPG	14,800	.5827	115	65	45	2,6	48	16
4150345	B041A14900CPG	—	—	14,900	.5866	115	65	45	2,6	48	16
4150346	B041A15000CPG	4151263	B051A15000CPG	15,000	.5906	115	65	45	2,6	48	16
4150349	B041A15200CPG	—	—	15,200	.5984	115	65	45	2,6	48	16
4150350	B041A15300CPG	4151267	B051A15300CPG	15,300	.6024	115	65	45	2,6	48	16
4150353	B041A15500CPG	—	—	15,500	.6102	115	65	45	2,7	48	16
4150359	B041A16000CPG	4151276	B051A16000CPG	16,000	.6299	115	65	45	2,8	48	16
4150360	B041A16100CPG	—	—	16,100	.6339	123	73	51	2,8	48	18
4150364	B041A16400CPG	—	—	16,400	.6457	123	73	51	2,8	48	18
4150365	B041A16500CPG	4151282	B051A16500CPG	16,500	.6496	123	73	51	2,9	48	18

(continued)



(B041A/B051A • -3 x D — continued)



● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150371	B041A17000CPG	4151288	B051A17000CPG	17,000	.6693	123	73	51	3,0	48	18
4150374	B041A17300CPG	—	—	17,300	.6811	123	73	51	3,0	48	18
4150377	B041A17500CPG	4151294	B051A17500CPG	17,500	.6890	123	73	51	3,0	48	18
4150403	B041A18000CPG	4148475	B051A18000CPG	18,000	.7087	123	73	51	3,1	48	18
4150409	B041A18500CPG	—	—	18,500	.7283	131	79	55	3,2	50	20
4150411	B041A18654CPG	—	—	18,654	.7344	131	79	55	3,2	50	20
4150421	B041A19500CPG	—	—	19,500	.7677	131	79	55	3,4	50	20
4150426	B041A20000CPG	4148598	B051A20000CPG	20,000	.7874	131	79	55	3,5	50	20

Tolerance • Metric

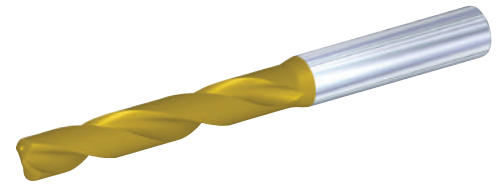
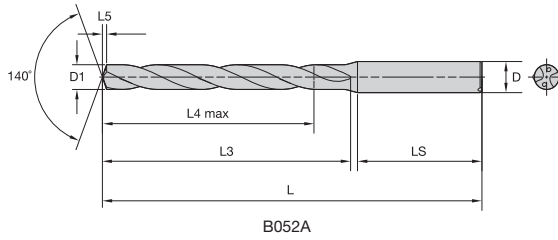
nominal size range	D1 tolerance	D tolerance h6
1-3	0,000/-0,014 (h8)	0,000/-0,006
>3-6	0,000/-0,012 (h7)	0,000/-0,008
>6-10	0,000/-0,015 (h7)	0,000/-0,009
>10-18	0,000/-0,018 (h7)	0,000/-0,011
>18-20	0,000/-0,021 (h7)	0,000/-0,013

TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE



B052A

■ B042A/B052A • ~5 x D



● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	order #	catalogue #	mm	in						
4151774	B042A01000CPG	—	—	1,000	.0394	58	9	6	0,2	28	4
4151777	B042A01041CPG	—	—	1,041	.0410	58	9	6	0,2	28	4
4151780	B042A01100CPG	—	—	1,100	.0433	58	9	6	0,2	28	4
4151781	B042A01181CPG	—	—	1,181	.0465	58	9	6	0,2	28	4
4151783	B042A01200CPG	—	—	1,200	.0472	58	9	6	0,2	28	4
4151784	B042A01300CPG	—	—	1,300	.0512	58	9	6	0,2	28	4
4151787	B042A01400CPG	—	—	1,400	.0551	58	9	6	0,2	28	4
4151788	B042A01500CPG	4149143	B052A01500CPG	1,500	.0591	58	12	9	0,2	28	4
4151789	B042A01600CPG	4149144	B052A01600CPG	1,600	.0630	58	12	9	0,3	28	4
4151790	B042A01700CPG	4149145	B052A01700CPG	1,700	.0669	58	12	9	0,3	28	4
4151791	B042A01800CPG	4149146	B052A01800CPG	1,800	.0709	58	12	9	0,3	28	4
4151792	B042A01900CPG	4149147	B052A01900CPG	1,900	.0748	58	12	9	0,3	28	4
—	—	4149148	B052A01984CPG	1,984	.0781	58	18	14	0,3	28	4
4151794	B042A02000CPG	4149149	B052A02000CPG	2,000	.0787	58	18	14	0,3	28	4
4151795	B042A02100CPG	4149150	B052A02100CPG	2,100	.0827	58	18	14	0,3	28	4
4151796	B042A02200CPG	4149151	B052A02200CPG	2,200	.0866	58	18	14	0,4	28	4
4151797	B042A02300CPG	4149152	B052A02300CPG	2,300	.0906	58	18	14	0,4	28	4
4151798	B042A02383CPG	4149153	B052A02383CPG	2,383	.0938	58	22	17	0,4	28	4
4151799	B042A02400CPG	4149154	B052A02400CPG	2,400	.0945	58	22	17	0,4	28	4
—	—	4149156	B052A02489CPG	2,489	.0980	58	22	17	0,4	28	4
4151802	B042A02500CPG	4149157	B052A02500CPG	2,500	.0984	58	22	17	0,4	28	4
4151803	B042A02578CPG	—	—	2,578	.1015	58	22	17	0,4	28	4
4151804	B042A02600CPG	4149159	B052A02600CPG	2,600	.1024	58	22	17	0,4	28	4
4151806	B042A02700CPG	4149161	B052A02700CPG	2,700	.1063	58	22	17	0,4	28	4
4151808	B042A02779CPG	4149163	B052A02779CPG	2,779	.1094	58	22	17	0,5	28	4
4151809	B042A02800CPG	4149164	B052A02800CPG	2,800	.1102	58	22	17	0,5	28	4
4151811	B042A02870CPG	—	—	2,870	.1130	58	22	17	0,5	28	4
4151812	B042A02900CPG	4149167	B052A02900CPG	2,900	.1142	58	22	17	0,5	28	4
4150602	B042A03000CPG	4149125	B052A03000CPG	3,000	.1181	66	28	23	0,5	36	6
4150633	B042A03048CPG	4149126	B052A03048CPG	3,048	.1200	66	28	23	0,5	36	6
4150634	B042A03100CPG	—	—	3,100	.1220	66	28	23	0,5	36	6
4150635	B042A03175CPG	—	—	3,175	.1250	66	28	23	0,5	36	6

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(B042A/B052A • -5 x D — continued)

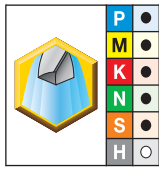


● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150636	B042A03200CPG	4149130	B052A03200CPG	3,200	.1260	66	28	23	0,5	36	6
	—	4149131	B052A03264CPG	3,264	.1285	66	28	23	0,5	36	6
4150638	B042A03300CPG	4121505	B052A03300CPG	3,300	.1299	66	28	23	0,5	36	6
4150639	B042A03400CPG	4149132	B052A03400CPG	3,400	.1339	66	28	23	0,6	36	6
4150640	B042A03455CPG		—	3,455	.1360	66	28	23	0,6	36	6
4150641	B042A03500CPG	4149184	B052A03500CPG	3,500	.1378	66	28	23	0,6	36	6
4150643	B042A03600CPG	4149186	B052A03600CPG	3,600	.1417	66	28	23	0,6	36	6
4150645	B042A03700CPG	4149188	B052A03700CPG	3,700	.1457	66	28	23	0,6	36	6
4150647	B042A03800CPG	4149190	B052A03800CPG	3,800	.1496	74	36	29	0,6	36	6
4150648	B042A03900CPG	4149191	B052A03900CPG	3,900	.1535	74	36	29	0,6	36	6
4150650	B042A04000CPG	4149193	B052A04000CPG	4,000	.1575	74	36	29	0,7	36	6
4150651	B042A04039CPG	4149194	B052A04039CPG	4,039	.1590	74	36	29	0,7	36	6
4150653	B042A04100CPG	4149196	B052A04100CPG	4,100	.1614	74	36	29	0,7	36	6
4150654	B042A04200CPG	4149197	B052A04200CPG	4,200	.1654	74	36	29	0,7	36	6
4150655	B042A04217CPG	4149198	B052A04217CPG	4,217	.1660	74	36	29	0,7	36	6
4150656	B042A04300CPG	4149199	B052A04300CPG	4,300	.1693	74	36	29	0,7	36	6
4150658	B042A04400CPG	4149201	B052A04400CPG	4,400	.1732	74	36	29	0,7	36	6
4150659	B042A04500CPG	4149202	B052A04500CPG	4,500	.1772	74	36	29	0,7	36	6
	—	4149203	B052A04600CPG	4,600	.1811	74	36	29	0,8	36	6
4150662	B042A04700CPG	4149205	B052A04700CPG	4,700	.1850	74	36	29	0,8	36	6
	—	4149206	B052A04763CPG	4,763	.1875	82	44	35	0,8	36	6
4150664	B042A04800CPG	4149207	B052A04800CPG	4,800	.1890	82	44	35	0,8	36	6
4150666	B042A04900CPG	4149209	B052A04900CPG	4,900	.1929	82	44	35	0,8	36	6
4150667	B042A05000CPG	4149210	B052A05000CPG	5,000	.1969	82	44	35	0,8	36	6
4150668	B042A05100CPG	4149211	B052A05100CPG	5,100	.2008	82	44	35	0,9	36	6
	—	4149213	B052A05159CPG	5,159	.2031	82	44	35	0,9	36	6
4150671	B042A05200CPG	4149214	B052A05200CPG	5,200	.2047	82	44	35	0,9	36	6
4150672	B042A05300CPG	4149215	B052A05300CPG	5,300	.2087	82	44	35	0,9	36	6
4150673	B042A05400CPG		—	5,400	.2126	82	44	35	0,9	36	6
4150675	B042A05500CPG	4149218	B052A05500CPG	5,500	.2165	82	44	35	0,9	36	6
	—	4149219	B052A05558CPG	5,558	.2188	82	44	35	0,9	36	6
4150677	B042A05600CPG	4149220	B052A05600CPG	5,600	.2205	82	44	35	0,9	36	6
4150679	B042A05700CPG	4149222	B052A05700CPG	5,700	.2244	82	44	35	1,0	36	6
4150680	B042A05800CPG	4149223	B052A05800CPG	5,800	.2283	82	44	35	1,0	36	6
4150681	B042A05900CPG		—	5,900	.2323	82	44	35	1,0	36	6
4150683	B042A06000CPG	4149226	B052A06000CPG	6,000	.2362	82	44	35	1,0	36	6
4150684	B042A06100CPG	4149227	B052A06100CPG	6,100	.2402	91	53	43	1,0	36	8
4150685	B042A06200CPG	4149228	B052A06200CPG	6,200	.2441	91	53	43	1,0	36	8
4150686	B042A06300CPG	4149229	B052A06300CPG	6,300	.2480	91	53	43	1,1	36	8
4150688	B042A06350CPG	4149230	B052A06350CPG	6,350	.2500	91	53	43	1,1	36	8
4150689	B042A06400CPG	4149231	B052A06400CPG	6,400	.2520	91	53	43	1,1	36	8
4150690	B042A06500CPG	4149232	B052A06500CPG	6,500	.2559	91	53	43	1,1	36	8
4150692	B042A06600CPG	4149234	B052A06600CPG	6,600	.2598	91	53	43	1,1	36	8
	—	4149235	B052A06630CPG	6,630	.2610	91	53	43	1,1	36	8
4150694	B042A06700CPG	4149236	B052A06700CPG	6,700	.2638	91	53	43	1,1	36	8
4150695	B042A06746CPG	4149237	B052A06746CPG	6,746	.2656	91	53	43	1,1	36	8
4150696	B042A06800CPG	4149238	B052A06800CPG	6,800	.2677	91	53	43	1,1	36	8
4150697	B042A06900CPG	4149239	B052A06900CPG	6,900	.2717	91	53	43	1,2	36	8

(continued)

(B042A/B052A • -5 x D – continued)



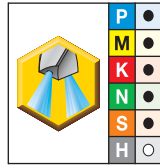
● first choice
○ alternate choice

grade KC7325		grade KC7325		D1 diameter							
order #	catalogue #	order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
4150698	B042A07000CPG	4149240	B052A07000CPG	7,000	.2756	91	53	43	1,2	36	8
4150700	B042A07145CPG	—	—	7,145	.2813	91	53	43	1,2	36	8
4150701	B042A07200CPG	4149243	B052A07200CPG	7,200	.2835	91	53	43	1,2	36	8
—	—	4149244	B052A07300CPG	7,300	.2874	91	53	43	1,2	36	8
4150703	B042A07400CPG	4149245	B052A07400CPG	7,400	.2913	91	53	43	1,3	36	8
4150704	B042A07500CPG	4149246	B052A07500CPG	7,500	.2953	91	53	43	1,3	36	8
4150706	B042A07600CPG	—	—	7,600	.2992	91	53	43	1,3	36	8
4150707	B042A07700CPG	—	—	7,700	.3031	91	53	43	1,3	36	8
4150708	B042A07800CPG	4149250	B052A07800CPG	7,800	.3071	91	53	43	1,3	36	8
—	—	4149252	B052A07938CPG	7,938	.3125	91	53	43	1,3	36	8
4150711	B042A08000CPG	4149253	B052A08000CPG	8,000	.3150	91	53	43	1,4	36	8
4150712	B042A08100CPG	4149254	B052A08100CPG	8,100	.3189	103	61	49	1,4	40	10
4150713	B042A08200CPG	4149255	B052A08200CPG	8,200	.3228	103	61	49	1,4	40	10
4150714	B042A08300CPG	—	—	8,300	.3268	103	61	49	1,4	40	10
—	—	4149257	B052A08334CPG	8,334	.3281	103	61	49	1,4	40	10
4150716	B042A08400CPG	4149258	B052A08400CPG	8,400	.3307	103	61	49	1,4	40	10
4150718	B042A08500CPG	4149260	B052A08500CPG	8,500	.3346	103	61	49	1,4	40	10
4150719	B042A08600CPG	4149261	B052A08600CPG	8,600	.3386	103	61	49	1,5	40	10
4150720	B042A08700CPG	4149262	B052A08700CPG	8,700	.3425	103	61	49	1,5	40	10
4150722	B042A08800CPG	4149264	B052A08800CPG	8,800	.3465	103	61	49	1,5	40	10
4150724	B042A09000CPG	4149266	B052A09000CPG	9,000	.3543	103	61	49	1,5	40	10
4150725	B042A09100CPG	4149267	B052A09100CPG	9,100	.3583	103	61	49	1,6	40	10
4150726	B042A09129CPG	—	—	9,129	.3594	103	61	49	1,6	40	10
4150727	B042A09200CPG	4149269	B052A09200CPG	9,200	.3622	103	61	49	1,6	40	10
4150728	B042A09300CPG	4149270	B052A09300CPG	9,300	.3661	103	61	49	1,6	40	10
4150730	B042A09400CPG	4149272	B052A09400CPG	9,400	.3701	103	61	49	1,6	40	10
4150731	B042A09500CPG	4149273	B052A09500CPG	9,500	.3740	103	61	49	1,6	40	10
4150732	B042A09525CPG	—	—	9,525	.3750	103	61	49	1,6	40	10
4150733	B042A09600CPG	4149275	B052A09600CPG	9,600	.3780	103	61	49	1,6	40	10
4150734	B042A09700CPG	—	—	9,700	.3819	103	61	49	1,7	40	10
4150735	B042A09800CPG	4149277	B052A09800CPG	9,800	.3858	103	61	49	1,7	40	10
4150736	B042A09900CPG	4149278	B052A09900CPG	9,900	.3898	103	61	49	1,7	40	10
4150739	B042A10000CPG	4149110	B052A10000CPG	10,000	.3937	103	61	49	1,7	40	10
—	—	4149111	B052A10100CPG	10,100	.3976	118	71	56	1,7	45	12
4150741	B042A10200CPG	4149112	B052A10200CPG	10,200	.4016	118	71	56	1,7	45	12
4150742	B042A10300CPG	4149293	B052A10300CPG	10,300	.4055	118	71	56	1,8	45	12
4150744	B042A10400CPG	4149295	B052A10400CPG	10,400	.4094	118	71	56	1,8	45	12
4150745	B042A10500CPG	4149296	B052A10500CPG	10,500	.4134	118	71	56	1,8	45	12
4150746	B042A10600CPG	4149297	B052A10600CPG	10,600	.4173	118	71	56	1,8	45	12
—	—	4149298	B052A10700CPG	10,700	.4213	118	71	56	1,8	45	12
4150749	B042A10800CPG	4149300	B052A10800CPG	10,800	.4252	118	71	56	1,9	45	12
4150750	B042A10900CPG	4149301	B052A10900CPG	10,900	.4291	118	71	56	1,9	45	12
4150751	B042A11000CPG	4149302	B052A11000CPG	11,000	.4331	118	71	56	1,9	45	12
4150752	B042A11100CPG	4149303	B052A11100CPG	11,100	.4370	118	71	56	1,9	45	12
4150754	B042A11200CPG	4149305	B052A11200CPG	11,200	.4409	118	71	56	1,9	45	12
4150755	B042A11300CPG	—	—	11,300	.4449	118	71	56	1,9	45	12
4150757	B042A11500CPG	4149308	B052A11500CPG	11,500	.4528	118	71	56	2,0	45	12
—	—	4149310	B052A11600CPG	11,600	.4567	118	71	56	2,0	45	12

(continued)



(B042A/B052A • -5 x D — continued)



● first choice
 ○ alternate choice

grade KC7325		grade KC7325		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	order #	catalogue #	mm	in						
4150760	B042A11700CPG	—	—	11,700	.4606	118	71	56	2,0	45	12
4150761	B042A11800CPG	4149312	B052A11800CPG	11,800	.4646	118	71	56	2,0	45	12
4150762	B042A11900CPG	—	—	11,900	.4685	118	71	56	2,0	45	12
4150764	B042A12000CPG	4149315	B052A12000CPG	12,000	.4724	118	71	56	2,1	45	12
4150765	B042A12100CPG	4149316	B052A12100CPG	12,100	.4764	124	77	60	2,1	45	14
—	—	4149317	B052A12200CPG	12,200	.4803	124	77	60	2,1	45	14
—	—	4149318	B052A12300CPG	12,300	.4843	124	77	60	2,1	45	14
4150769	B042A12400CPG	—	—	12,400	.4882	124	77	60	2,1	45	14
4150770	B042A12500CPG	4149321	B052A12500CPG	12,500	.4921	124	77	60	2,2	45	14
4150771	B042A12600CPG	—	—	12,600	.4961	124	77	60	2,2	45	14
—	—	4149323	B052A12700CPG	12,700	.5000	124	77	60	2,2	45	14
4150773	B042A12800CPG	4149324	B052A12800CPG	12,800	.5039	124	77	60	2,2	45	14
4150774	B042A12900CPG	—	—	12,900	.5079	124	77	60	2,2	45	14
4150775	B042A13000CPG	4149326	B052A13000CPG	13,000	.5118	124	77	60	2,2	45	14
—	—	4149328	B052A13100CPG	13,100	.5157	124	77	60	2,3	45	14
4150781	B042A13500CPG	4149332	B052A13500CPG	13,500	.5315	124	77	60	2,3	45	14
4150787	B042A14000CPG	4149338	B052A14000CPG	14,000	.5512	124	77	60	2,4	45	14
—	—	4149340	B052A14200CPG	14,200	.5591	133	83	63	2,5	48	16
4150793	B042A14500CPG	4149344	B052A14500CPG	14,500	.5709	133	83	63	2,5	48	16
4150794	B042A14600CPG	—	—	14,600	.5748	133	83	63	2,5	48	16
4150796	B042A14700CPG	—	—	14,700	.5787	133	83	63	2,5	48	16
4150799	B042A15000CPG	—	—	15,000	.5906	133	83	63	2,6	48	16
—	—	4149352	B052A15100CPG	15,100	.5945	133	83	63	2,6	48	16
—	—	4149360	B052A15800CPG	15,800	.6220	133	83	63	2,7	48	16
4150812	B042A16000CPG	4149363	B052A16000CPG	16,000	.6299	133	83	63	2,8	48	16
4150818	B042A16500CPG	4149369	B052A16500CPG	16,500	.6496	143	93	71	2,9	48	18
4150824	B042A17000CPG	—	—	17,000	.6693	143	93	71	3,0	48	18
4150830	B042A17500CPG	—	—	17,500	.6890	143	93	71	3,0	48	18
4150838	B042A18200CPG	—	—	18,200	.7165	153	101	77	3,2	50	20
—	—	4149407	B052A18700CPG	18,700	.7362	153	101	77	3,3	50	20
—	—	4149421	B052A20000CPG	20,000	.7874	153	101	77	3,5	50	20

Tolerance • Metric

nominal size range	D1 tolerance	D tolerance h6
1-3	0,000/-0,014 (h8)	0,000/-0,006
>3-6	0,000/-0,012 (h7)	0,000/-0,008
>6-10	0,000/-0,015 (h7)	0,000/-0,009
>10-18	0,000/-0,018 (h7)	0,000/-0,011
>18-20	0,000/-0,021 (h7)	0,000/-0,013

■ G0drill™ • B04_CPG Series • Grade KC7325™ • Flood Coolant • Drill Diameters 1–20mm • Metric

Material Group	Cutting Speed – vc		Metric													
	Range – m/min			Recommended Feed Rate (f) by Diameter												
	min	Starting Value	max	1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0			
				mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r		
P	0	70	80	115	mm/r	0,03–0,08	0,04–0,09	0,05–0,11	0,08–0,14	0,09–0,19	0,11–0,22	0,13–0,26	0,15–0,30	0,19–0,36	0,24–0,46	
	1	60	70	100	mm/r	0,04–0,09	0,05–0,11	0,06–0,13	0,09–0,16	0,11–0,22	0,13–0,26	0,15–0,31	0,18–0,35	0,22–0,42	0,28–0,54	
	2	80	90	100	mm/r	0,04–0,09	0,05–0,11	0,06–0,13	0,08–0,16	0,12–0,22	0,14–0,26	0,17–0,31	0,20–0,35	0,24–0,42	0,31–0,53	
	3	50	70	90	mm/r	0,05–0,11	0,06–0,13	0,07–0,15	0,09–0,17	0,13–0,23	0,15–0,28	0,19–0,33	0,22–0,38	0,26–0,47	0,34–0,59	
	4	50	70	100	mm/r	0,04–0,12	0,05–0,13	0,06–0,15	0,08–0,17	0,12–0,23	0,14–0,28	0,17–0,33	0,19–0,38	0,23–0,47	0,29–0,59	
	5	30	40	60	mm/r	0,03–0,05	0,04–0,06	0,05–0,07	0,06–0,10	0,08–0,14	0,10–0,18	0,12–0,22	0,14–0,24	0,18–0,32	0,23–0,41	
M	1	20	30	40	mm/r	0,02–0,05	0,03–0,06	0,04–0,07	0,05–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20	
	2	30	40	50	mm/r	0,02–0,06	0,03–0,07	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,14	0,10–0,16	0,12–0,18	0,14–0,20	0,16–0,22	
	3	20	30	40	mm/r	0,02–0,05	0,03–0,06	0,04–0,07	0,06–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20	
K	1	80	130	170	mm/r	0,09–0,18	0,10–0,20	0,11–0,22	0,12–0,24	0,16–0,31	0,20–0,38	0,23–0,44	0,25–0,49	0,31–0,60	0,38–0,74	
	2	90	110	120	mm/r	0,06–0,13	0,08–0,15	0,10–0,17	0,12–0,19	0,16–0,25	0,20–0,31	0,23–0,36	0,25–0,40	0,31–0,48	0,38–0,60	
	3	80	110	130	mm/r	0,05–0,11	0,06–0,13	0,07–0,15	0,09–0,19	0,12–0,25	0,14–0,30	0,17–0,35	0,19–0,40	0,25–0,48	0,30–0,60	
N	1	90	230	270	mm/r	0,05–0,12	0,06–0,13	0,08–0,14	0,10–0,16	0,12–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,48	
	2	90	220	270	mm/r	0,04–0,08	0,06–0,12	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,44	0,32–0,52	
	3	90	180	225	mm/r	0,10–0,13	0,11–0,14	0,12–0,14	0,13–0,16	0,14–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,44	
	4	90	130	270	mm/r	0,04–0,08	0,06–0,12	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,40	0,32–0,48	
S	1	20	25	30	mm/r	0,01–0,04	0,02–0,05	0,03–0,06	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,13	0,10–0,14	0,12–0,16	0,14–0,18	
	2	10	20	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16	
	3	20	25	40	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15	
	4	20	25	50	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16	
H	1	10	15	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16	
	2	10	10	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15	



■ GOdrill™ • B05_CPG Series • Grade KC7325™ • Through Coolant • Drill Diameters 1–20mm • Metric

		Cutting Speed – vc			Metric										
		Range – m/min			Recommended Feed Rate (f) by Diameter										
Material Group	0	min	Starting Value	max	mm/r	1,0	2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0
						mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r	mm/r
P	1	70	80	115	mm/r	0,03–0,08	0,04–0,09	0,05–0,11	0,08–0,14	0,09–0,19	0,11–0,22	0,13–0,26	0,15–0,30	0,19–0,36	0,24–0,46
	2	70	100	140	mm/r	0,04–0,09	0,05–0,12	0,07–0,14	0,08–0,16	0,11–0,22	0,13–0,26	0,15–0,31	0,18–0,35	0,22–0,42	0,28–0,54
	3	90	120	140	mm/r	0,04–0,09	0,05–0,12	0,07–0,14	0,08–0,16	0,12–0,22	0,14–0,26	0,17–0,31	0,20–0,35	0,24–0,42	0,31–0,53
	4	60	80	100	mm/r	0,05–0,10	0,06–0,13	0,08–0,15	0,09–0,17	0,13–0,23	0,15–0,28	0,19–0,33	0,22–0,38	0,26–0,47	0,34–0,59
	5	50	80	100	mm/r	0,05–0,10	0,06–0,13	0,07–0,15	0,08–0,17	0,12–0,23	0,14–0,28	0,17–0,33	0,19–0,38	0,23–0,47	0,29–0,59
	6	40	50	70	mm/r	0,03–0,05	0,04–0,06	0,05–0,07	0,06–0,10	0,08–0,14	0,10–0,18	0,12–0,22	0,14–0,24	0,18–0,32	0,23–0,41
M	1	20	30	40	mm/r	0,02–0,05	0,03–0,06	0,04–0,07	0,05–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20
	2	30	40	50	mm/r	0,02–0,06	0,03–0,07	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,14	0,10–0,16	0,12–0,18	0,14–0,20	0,16–0,22
	3	20	30	40	mm/r	0,02–0,05	0,03–0,06	0,04–0,07	0,05–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20
K	1	80	120	170	mm/r	0,08–0,16	0,09–0,17	0,11–0,22	0,12–0,24	0,16–0,31	0,20–0,38	0,23–0,44	0,25–0,49	0,31–0,60	0,38–0,74
	2	80	110	140	mm/r	0,10–0,14	0,11–0,15	0,12–0,16	0,13–0,19	0,16–0,25	0,20–0,31	0,23–0,36	0,25–0,40	0,31–0,48	0,38–0,60
	3	80	100	130	mm/r	0,05–0,13	0,07–0,15	0,08–0,17	0,09–0,19	0,12–0,25	0,14–0,30	0,17–0,35	0,19–0,40	0,24–0,48	0,30–0,60
N	1	90	230	315	mm/r	0,05–0,12	0,06–0,13	0,08–0,14	0,10–0,16	0,12–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,48
	2	90	225	270	mm/r	0,04–0,08	0,06–0,12	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,44	0,32–0,52
	3	90	180	270	mm/r	0,10–0,13	0,11–0,14	0,12–0,14	0,13–0,16	0,14–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,44
	4	90	135	180	mm/r	0,04–0,08	0,06–0,12	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,40	0,32–0,48
S	1	10	25	30	mm/r	0,01–0,04	0,02–0,05	0,03–0,06	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,13	0,10–0,14	0,12–0,16	0,14–0,18
	2	10	20	25	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
	3	10	25	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15
	4	10	25	40	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
H	1	10	15	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
	2	10	10	30	mm/r	0,01–0,03	0,02–0,03	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15

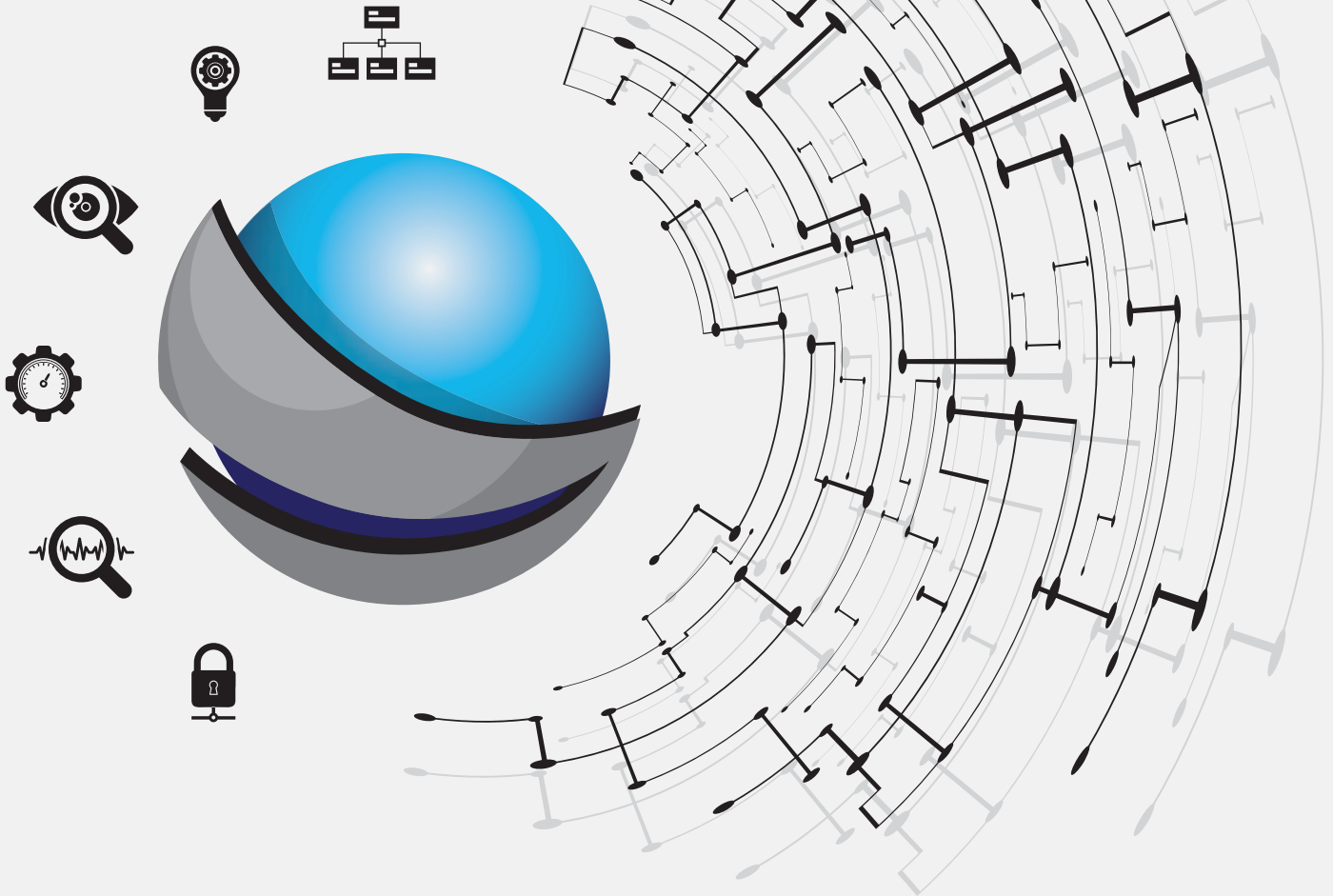
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Kenna Universal™ Drills

Primary Application

Kenna Universal Drills (B96/B97_ Series) are engineered to deliver superior performance in steel, cast iron, and stainless steel applications making it ideal for small- and medium-sized shops. The universal application profile reduces tool change times and the number of drills in inventory. Covering a large spectrum of off-the-shelf diameters and a broad range of applications makes Kenna Universal Drills an excellent alternative to other high-performance products.

The B976Z series is available from 2,5–3mm making it the first standard offering in less than 3mm. This extended diameter offering covers all common tap drill sizes, including an expanded selection of wire, fractional, and letter sizes.

The new B967 series satisfies the demand for non-coolant drills up to 5 x D for applications with flood coolant or dry.

Use as Pilot Drill

- Ideal point angle and tolerance make the Kenna Universal drill the preferred pilot drill for B27_ series solid carbide deep-hole drills.

Features and Benefits

Kenna Universal Drills with Through Coolant

- Multipurpose solid carbide drill engineered to deliver superior performance in steel, cast iron, stainless steel, and other applications, making it ideal for small- and medium-sized shops.
- The universal application profile reduces tool change times and the number of drills in inventory.
- It's a problem solver that works everywhere.

Kenna Universal Drill-Point Design

- Low thrust. Works well on a variety of machines.
- Excellent centring capabilities.
- Easy to regrind.

Four-Margin Land Design

- Improves hole straightness and roundness.
- Provides good alignment and stability in tough drilling applications — even when drilling through cross holes.

KC7315™ Grade

- A multilayer, TiAlN-based coating with high hot hardness enables 30% higher cutting speeds and constant tool life.
- Surface finish ensures chip evacuation when drilling deep holes.

Universal application profile, problem solver, and pilot drill.

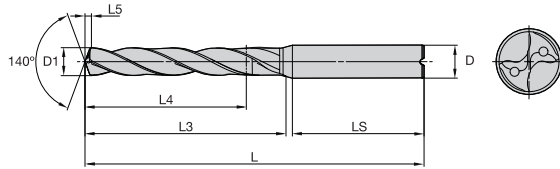


Customisation

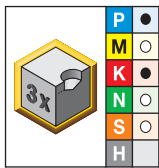
- Intermediate diameters available as semi-standards.
- Length variations and step drills available as engineered solutions.

For standard line items with F-shank, please refer to the Master Catalogue 2018 or to the e-catalogue on kennametal.com.





■ B976A • ~3 x D

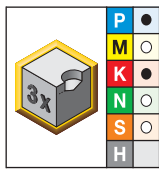


● first choice
○ alternate choice

grade KC7315		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	mm	in						
4042542	B976Z02500	2,500	.0984	50	16	11	0,4	28	3
4042548	B976Z02800	2,800	.1102	50	16	11	0,5	28	3
2878592	B976A03000	3,000	.1181	62	20	14	0,5	36	6
4054494	B976A03175	3,175	.1250	62	20	14	0,5	36	6
2878591	B976A03300	3,300	.1299	62	20	14	0,5	36	6
3528125	B976A03500	3,500	.1378	62	20	14	0,6	36	6
3110544	B976A03600	3,600	.1417	62	20	14	0,6	36	6
2392360	B976A03800	3,800	.1496	66	24	17	0,6	36	6
1913515	B976A04000	4,000	.1575	66	24	17	0,7	36	6
1913516	B976A04200	4,200	.1654	66	24	17	0,7	36	6
2276088	B976A04300	4,300	.1693	66	24	17	0,7	36	6
4054500	B976A04496	4,496	.1770	66	24	17	0,7	36	6
1913517	B976A04500	4,500	.1772	66	24	17	0,7	36	6
1913518	B976A04600	4,600	.1811	66	24	17	0,8	36	6
3528126	B976A04620	4,620	.1819	66	24	17	0,8	36	6
2649364	B976A04763	4,763	.1875	66	28	20	0,8	36	6
1913519	B976A04800	4,800	.1890	66	28	20	0,8	36	6
1913520	B976A05000	5,000	.1969	66	28	20	0,8	36	6
2385356	B976A05100	5,100	.2008	66	28	20	0,8	36	6
1984183	B976A05200	5,200	.2047	66	28	20	0,9	36	6
1988932	B976A05300	5,300	.2087	66	28	20	0,9	36	6
2264538	B976A05400	5,400	.2126	66	28	20	0,9	36	6
1913521	B976A05500	5,500	.2165	66	28	20	0,9	36	6
2224587	B976A05600	5,600	.2205	66	28	20	0,9	36	6
1913522	B976A05700	5,700	.2244	66	28	20	1,0	36	6
1913523	B976A05800	5,800	.2283	66	28	20	1,0	36	6
1913524	B976A06000	6,000	.2362	66	28	20	1,0	36	6
1986773	B976A06200	6,200	.2441	79	34	24	1,0	36	8
2649366	B976A06350	6,350	.2500	79	34	24	1,1	36	8
1913525	B976A06500	6,500	.2559	79	34	24	1,1	36	8
2231776	B976A06600	6,600	.2598	79	34	24	1,1	36	8
3121287	B976A06700	6,700	.2638	79	34	24	1,1	36	8

(continued)

(B976A • ~3 x D — continued)



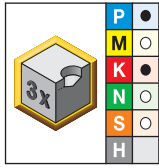
● first choice
○ alternate choice

grade KC7315		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	mm	in						
3528129	B976A06750	6,750	.2657	79	34	24	1,1	36	8
1913526	B976A06800	6,800	.2677	79	34	24	1,1	36	8
1913527	B976A07000	7,000	.2756	79	34	24	1,2	36	8
3110545	B976A07200	7,200	.2835	79	41	29	1,2	36	8
1913528	B976A07400	7,400	.2913	79	41	29	1,3	36	8
1913529	B976A07500	7,500	.2953	79	41	29	1,3	36	8
1913530	B976A07800	7,800	.3071	79	41	29	1,3	36	8
2397689	B976A07900	7,900	.3110	79	41	29	1,3	36	8
2649370	B976A07938	7,938	.3125	79	41	29	1,3	36	8
1913531	B976A08000	8,000	.3150	79	41	29	1,4	36	8
2036154	B976A08100	8,100	.3189	89	47	35	1,4	40	10
2390961	B976A08200	8,200	.3228	89	47	35	1,4	40	10
1913532	B976A08500	8,500	.3346	89	47	35	1,4	40	10
2222651	B976A08600	8,600	.3386	89	47	35	1,5	40	10
1988983	B976A08700	8,700	.3425	89	47	35	1,5	40	10
1913533	B976A08800	8,800	.3465	89	47	35	1,5	40	10
4054510	B976A08839	8,839	.3480	89	47	35	1,5	40	10
1913534	B976A09000	9,000	.3543	89	47	35	1,5	40	10
2224588	B976A09100	9,100	.3583	89	47	35	1,5	40	10
2408308	B976A09200	9,200	.3622	89	47	35	1,6	40	10
1913535	B976A09300	9,300	.3661	89	47	35	1,6	40	10
1913536	B976A09500	9,500	.3740	89	47	35	1,6	40	10
2649374	B976A09525	9,525	.3750	89	47	35	1,6	40	10
2231778	B976A09600	9,600	.3780	89	47	35	1,6	40	10
1961106	B976A09700	9,700	.3819	89	47	35	1,7	40	10
1913537	B976A09800	9,800	.3858	89	47	35	1,7	40	10
1913538	B976A10000	10,000	.3937	89	47	35	1,7	40	10
1913539	B976A10200	10,200	.4016	102	55	40	1,7	45	12
4054512	B976A10262	10,262	.4040	102	55	40	1,8	45	12
3119977	B976A10300	10,300	.4055	102	55	40	1,8	45	12
2649376	B976A10320	10,320	.4063	102	55	40	1,8	45	12
1913540	B976A10500	10,500	.4134	102	55	40	1,8	45	12
1913541	B976A10700	10,700	.4213	102	55	40	1,8	45	12
2388784	B976A10800	10,800	.4252	102	55	40	1,8	45	12
1913542	B976A11000	11,000	.4331	102	55	40	1,9	45	12
2649378	B976A11113	11,113	.4375	102	55	40	1,9	45	12
1913543	B976A11200	11,200	.4409	102	55	40	1,9	45	12
1913544	B976A11500	11,500	.4528	102	55	40	2,0	45	12
1913545	B976A11700	11,700	.4606	102	55	40	2,0	45	12
1913546	B976A12000	12,000	.4724	102	55	40	2,1	45	12
1913547	B976A12500	12,500	.4921	107	60	43	2,1	45	14
1913548	B976A12700	12,700	.5000	107	60	43	2,2	45	14
2227984	B976A12800	12,800	.5039	107	60	43	2,2	45	14
1913549	B976A13000	13,000	.5118	107	60	43	2,2	45	14
1913550	B976A13500	13,500	.5315	107	60	43	2,3	45	14
1913551	B976A13700	13,700	.5394	107	60	43	2,4	45	14
1913552	B976A14000	14,000	.5512	107	60	43	2,4	45	14
2226630	B976A14100	14,100	.5551	115	65	45	2,4	48	16

(continued)



(B976A • ~3 x D – continued)



● first choice
○ alternate choice

grade KC7315		D1 diameter								
order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D	
2404108	B976A14200	14,200	.5591	115	65	45	2,5	48	16	
2649382	B976A14288	14,288	.5625	115	65	45	2,5	48	16	
1913553	B976A14500	14,500	.5709	115	65	45	2,5	48	16	
1913554	B976A14700	14,700	.5787	115	65	45	2,5	48	16	
1913555	B976A15000	15,000	.5906	115	65	45	2,6	48	16	
1913556	B976A15500	15,500	.6102	115	65	45	2,7	48	16	
1913558	B976A16000	16,000	.6299	115	65	45	2,8	48	16	
2882164	B976A16200	16,200	.6378	123	73	51	2,8	48	18	
1913559	B976A16500	16,500	.6496	123	73	51	2,9	48	18	
1913560	B976A17000	17,000	.6693	123	73	51	2,9	48	18	
2397289	B976A17100	17,100	.6732	123	73	51	3,0	48	18	
1913562	B976A18000	18,000	.7087	123	73	51	3,1	48	18	
1913566	B976A20000	20,000	.7874	131	79	55	3,5	50	20	

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3-6	0,004/0,016	0,000/-0,008
>6-10	0,006/0,021	0,000/-0,009
>10-18	0,007/0,025	0,000/-0,011
>18-25,4	0,008/0,029	0,000/-0,013

TURNING

FIRST CHOICE

MILLING

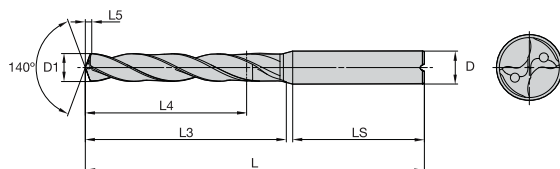
FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



■ B977A • ~5 x D



● first choice
○ alternate choice

grade KC7315		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	mm	in						
2425285	B977A03000	3,000	.1181	66	28	23	0,5	36	6
2425288	B977A03100	3,100	.1220	66	28	23	0,5	36	6
4054515	B977A03175	3,175	.1250	66	28	23	0,5	36	6
2425290	B977A03200	3,200	.1260	66	28	23	0,5	36	6
1959665	B977A03300	3,300	.1299	66	28	23	0,5	36	6
2425292	B977A03400	3,400	.1339	66	28	23	0,6	36	6
2425303	B977A03500	3,500	.1378	66	28	23	0,6	36	6
2425304	B977A03600	3,600	.1417	66	28	23	0,6	36	6
2425305	B977A03700	3,700	.1457	66	28	23	0,6	36	6
2425306	B977A03800	3,800	.1496	74	36	29	0,6	36	6
2203489	B977A03900	3,900	.1535	74	36	29	0,6	36	6
2649386	B977A03970	3,970	.1563	74	36	29	0,7	36	6
1913567	B977A04000	4,000	.1575	74	36	29	0,7	36	6
4054518	B977A04039	4,039	.1590	74	36	29	0,7	36	6
2416279	B977A04100	4,100	.1614	74	36	29	0,7	36	6
1913568	B977A04200	4,200	.1654	74	36	29	0,7	36	6
2040680	B977A04300	4,300	.1693	74	36	29	0,7	36	6
2425309	B977A04400	4,400	.1732	74	36	29	0,7	36	6
1913569	B977A04500	4,500	.1772	74	36	29	0,7	36	6
1913570	B977A04600	4,600	.1811	74	36	29	0,8	36	6
2425310	B977A04700	4,700	.1850	74	36	29	0,8	36	6
2649389	B977A04763	4,763	.1875	82	44	35	0,8	36	6
1913571	B977A04800	4,800	.1890	82	44	35	0,8	36	6
2396971	B977A04900	4,900	.1929	82	44	35	0,8	36	6
1913572	B977A05000	5,000	.1969	82	44	35	0,8	36	6
2049487	B977A05100	5,100	.2008	82	44	35	0,8	36	6
1975006	B977A05200	5,200	.2047	82	44	35	0,9	36	6
2202510	B977A05300	5,300	.2087	82	44	35	0,9	36	6

(continued)



(B977A • ~5 x D – continued)

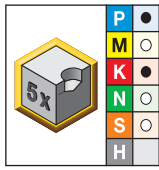


● first choice
○ alternate choice

grade KC7315		D1 diameter							
order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
2425311	B977A05400	5,400	.2126	82	44	35	0,9	36	6
1913573	B977A05500	5,500	.2165	82	44	35	0,9	36	6
2649391	B977A05558	5,558	.2188	82	44	35	0,9	36	6
1959664	B977A05600	5,600	.2205	82	44	35	0,9	36	6
1988931	B977A05700	5,700	.2244	82	44	35	1,0	36	6
1913574	B977A05800	5,800	.2283	82	44	35	1,0	36	6
2228362	B977A05900	5,900	.2323	82	44	35	1,0	36	6
1913575	B977A06000	6,000	.2362	82	44	35	1,0	36	6
2043779	B977A06100	6,100	.2402	91	53	43	1,0	36	8
4132877	B977A06150	6,150	.2421	91	53	43	1,0	36	8
2425323	B977A06200	6,200	.2441	91	53	43	1,0	36	8
2425324	B977A06300	6,300	.2480	91	53	43	1,1	36	8
2383552	B977A06350	6,350	.2500	91	53	43	1,1	36	8
2383778	B977A06400	6,400	.2520	91	53	43	1,1	36	8
1913576	B977A06500	6,500	.2559	91	53	43	1,1	36	8
2425325	B977A06600	6,600	.2598	91	53	43	1,1	36	8
2230539	B977A06700	6,700	.2638	91	53	43	1,1	36	8
1913577	B977A06800	6,800	.2677	91	53	43	1,1	36	8
1959666	B977A06900	6,900	.2717	91	53	43	1,2	36	8
1913578	B977A07000	7,000	.2756	91	53	43	1,2	36	8
2203579	B977A07100	7,100	.2795	91	53	43	1,2	36	8
2658216	B977A07145	7,145	.2813	91	53	43	1,2	36	8
2264019	B977A07200	7,200	.2835	91	53	43	1,2	36	8
1913579	B977A07400	7,400	.2913	91	53	43	1,3	36	8
1913580	B977A07500	7,500	.2953	91	53	43	1,3	36	8
2425330	B977A07600	7,600	.2992	91	53	43	1,3	36	8
1992230	B977A07700	7,700	.3031	91	53	43	1,3	36	8
1913581	B977A07800	7,800	.3071	91	53	43	1,3	36	8
2658218	B977A07938	7,938	.3125	91	53	43	1,3	36	8
1913582	B977A08000	8,000	.3150	91	53	43	1,4	36	8
2244229	B977A08100	8,100	.3189	103	61	49	1,4	40	10
1986652	B977A08200	8,200	.3228	103	61	49	1,4	40	10
2390123	B977A08300	8,300	.3268	103	61	49	1,4	40	10
2236065	B977A08400	8,400	.3307	103	61	49	1,4	40	10
1913583	B977A08500	8,500	.3346	103	61	49	1,4	40	10
2425331	B977A08600	8,600	.3386	103	61	49	1,5	40	10
2203834	B977A08700	8,700	.3425	103	61	49	1,5	40	10
2658221	B977A08733	8,733	.3438	103	61	49	1,5	40	10
1913584	B977A08800	8,800	.3465	103	61	49	1,5	40	10
1971763	B977A08900	8,900	.3504	103	61	49	1,5	40	10
1913585	B977A09000	9,000	.3543	103	61	49	1,5	40	10
2425332	B977A09100	9,100	.3583	103	61	49	1,5	40	10
2218492	B977A09200	9,200	.3622	103	61	49	1,6	40	10
1913586	B977A09300	9,300	.3661	103	61	49	1,6	40	10
2408209	B977A09400	9,400	.3701	103	61	49	1,6	40	10
1913587	B977A09500	9,500	.3740	103	61	49	1,6	40	10
2658224	B977A09525	9,525	.3750	103	61	49	1,6	40	10
2425344	B977A09600	9,600	.3780	103	61	49	1,6	40	10

(continued)

(B977A • ~5 x D — continued)



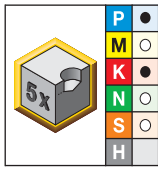
● first choice
○ alternate choice

grade KC7315		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	mm	in						
1939528	B977A09700	9,700	.3819	103	61	49	1,7	40	10
2658214	B977A09746	9,746	.3837	103	61	49	1,7	40	10
1913588	B977A09800	9,800	.3858	103	61	49	1,7	40	10
2245191	B977A09900	9,900	.3898	103	61	49	1,7	40	10
1913589	B977A10000	10,000	.3937	103	61	49	1,7	40	10
2407294	B977A10100	10,100	.3976	118	71	56	1,7	45	12
1913590	B977A10200	10,200	.4016	118	71	56	1,7	45	12
4054527	B977A10262	10,262	.4040	118	71	56	1,8	45	12
2240351	B977A10300	10,300	.4055	118	71	56	1,8	45	12
2658227	B977A10320	10,320	.4063	118	71	56	1,8	45	12
2425455	B977A10400	10,400	.4094	118	71	56	1,8	45	12
1913591	B977A10500	10,500	.4134	118	71	56	1,8	45	12
1913592	B977A10700	10,700	.4213	118	71	56	1,8	45	12
2658228	B977A10716	10,716	.4219	118	71	56	1,8	45	12
2256918	B977A10800	10,800	.4252	118	71	56	1,8	45	12
2425457	B977A10900	10,900	.4291	118	71	56	1,9	45	12
1913593	B977A11000	11,000	.4331	118	71	56	1,9	45	12
2264020	B977A11100	11,100	.4370	118	71	56	1,9	45	12
2658229	B977A11113	11,113	.4375	118	71	56	1,9	45	12
1913594	B977A11200	11,200	.4409	118	71	56	1,9	45	12
2425456	B977A11300	11,300	.4449	118	71	56	1,9	45	12
2425381	B977A11400	11,400	.4488	118	71	56	2,0	45	12
1913595	B977A11500	11,500	.4528	118	71	56	2,0	45	12
2049488	B977A11800	11,800	.4646	118	71	56	2,0	45	12
1913597	B977A12000	12,000	.4724	118	71	56	2,1	45	12
2384430	B977A12100	12,100	.4764	124	77	60	2,1	45	14
2049489	B977A12200	12,200	.4803	124	77	60	2,1	45	14
2045820	B977A12300	12,300	.4843	124	77	60	2,1	45	14
2425380	B977A12400	12,400	.4882	124	77	60	2,1	45	14
1913598	B977A12500	12,500	.4921	124	77	60	2,2	45	14
2203577	B977A12600	12,600	.4961	124	77	60	2,2	45	14
1913599	B977A12700	12,700	.5000	124	77	60	2,2	45	14
2226662	B977A12900	12,900	.5079	124	77	60	2,2	45	14
1913600	B977A13000	13,000	.5118	124	77	60	2,2	45	14
2401853	B977A13100	13,100	.5157	124	77	60	2,3	45	14
2229138	B977A13300	13,300	.5236	124	77	60	2,3	45	14
4054528	B977A13495	13,495	.5313	124	77	60	2,3	45	14
1913601	B977A13500	13,500	.5315	124	77	60	2,3	45	14
1913602	B977A13700	13,700	.5394	124	77	60	2,4	45	14
2251639	B977A13800	13,800	.5433	124	77	60	2,4	45	14
1913603	B977A14000	14,000	.5512	124	77	60	2,4	45	14
2230406	B977A14200	14,200	.5591	133	83	63	2,5	48	16
1913604	B977A14500	14,500	.5709	133	83	63	2,5	48	16
2043418	B977A14600	14,600	.5748	133	83	63	2,5	48	16
1913605	B977A14700	14,700	.5787	133	83	63	2,5	48	16
1960078	B977A14900	14,900	.5866	133	83	63	2,6	48	16
1913606	B977A15000	15,000	.5906	133	83	63	2,6	48	16
1960079	B977A15100	15,100	.5945	133	83	63	2,6	48	16

(continued)



(B977A • ~5 x D – continued)



● first choice
○ alternate choice

grade KC7315		D1 diameter								
order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D	
1913607	B977A15500	15,500	.6102	133	83	63	2,7	48	16	
1913609	B977A16000	16,000	.6299	133	83	63	2,8	48	16	
2416198	B977A16400	16,400	.6457	143	93	71	2,8	48	18	
1913610	B977A16500	16,500	.6496	143	93	71	2,9	48	18	
1913611	B977A17000	17,000	.6693	143	93	71	2,9	48	18	
1913612	B977A17500	17,500	.6890	143	93	71	3,0	48	18	
2391872	B977A17700	17,700	.6969	143	93	71	3,1	48	18	
1913613	B977A18000	18,000	.7087	143	93	71	3,1	48	18	
1913614	B977A18500	18,500	.7283	153	101	77	3,2	50	20	
1913615	B977A19000	19,000	.7480	153	101	77	3,3	50	20	
1913616	B977A19500	19,500	.7677	153	101	77	3,4	50	20	
2386665	B977A19700	19,700	.7756	153	101	77	3,4	50	20	
1913617	B977A20000	20,000	.7874	153	101	77	3,5	50	20	

Tolerance • Metric

nominal size range	D1 tolerance m7	D tolerance h6
>3-6	0,004/0,016	0,000/-0,008
>6-10	0,006/0,021	0,000/-0,009
>10-18	0,007/0,025	0,000/-0,011
>18-25,4	0,008/0,029	0,000/-0,013

TURNING

FIRST CHOICE

MILLING

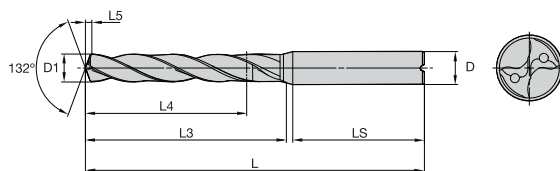
FIRST CHOICE

HOLEMAKING

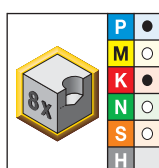
FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE



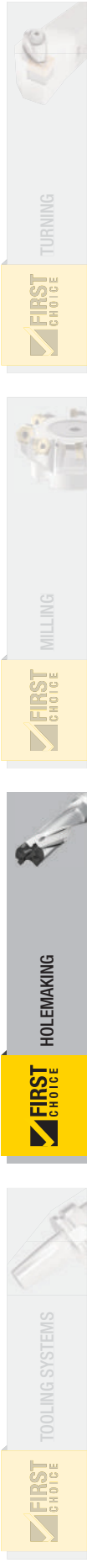
■ B978A • ~8 x D



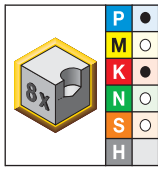
● first choice
○ alternate choice

grade KC7315		D1 diameter		L	L3	L4 max	L5	LS	D
order #	catalogue #	mm	in						
3782458	B978A03000	3,000	.1181	78	40	33	0,6	36	6
5006833	B978A03800	3,800	.1496	87	49	41	0,8	36	6
2888306	B978A04000	4,000	.1575	87	49	41	0,8	36	6
3858210	B978A04200	4,200	.1654	87	49	41	0,9	36	6
3593089	B978A04500	4,500	.1772	87	49	41	0,9	36	6
2658394	B978A04763	4,763	.1875	94	56	48	1,0	36	6
1913618	B978A05000	5,000	.1969	94	56	48	1,0	36	6
2264933	B978A05100	5,100	.2008	94	56	48	1,1	36	6
2264934	B978A05200	5,200	.2047	94	56	48	1,1	36	6
2264889	B978A05300	5,300	.2087	94	56	48	1,1	36	6
1913619	B978A05500	5,500	.2165	94	56	48	1,1	36	6
2043415	B978A05700	5,700	.2244	94	56	48	1,2	36	6
1913620	B978A06000	6,000	.2362	94	56	48	1,2	36	6
2261701	B978A06100	6,100	.2402	105	67	57	1,3	36	8
2264928	B978A06200	6,200	.2441	105	67	57	1,3	36	8
2658396	B978A06350	6,350	.2500	105	67	57	1,3	36	8
1913621	B978A06500	6,500	.2559	105	67	57	1,4	36	8
2264972	B978A06700	6,700	.2638	105	67	57	1,4	36	8
1913622	B978A06800	6,800	.2677	105	67	57	1,4	36	8
1913623	B978A07000	7,000	.2756	105	67	57	1,5	36	8
1913624	B978A07500	7,500	.2953	110	72	61	1,6	36	8
1913626	B978A08000	8,000	.3150	110	72	61	1,7	36	8
2264953	B978A08100	8,100	.3189	122	80	68	1,7	40	10
2940518	B978A08200	8,200	.3228	122	80	68	1,7	40	10
1913627	B978A08500	8,500	.3346	122	80	68	1,8	40	10
2264954	B978A08600	8,600	.3386	122	80	68	1,8	40	10
2264955	B978A08700	8,700	.3425	122	80	68	1,8	40	10
1913628	B978A09000	9,000	.3543	122	80	68	1,9	40	10
1913629	B978A09500	9,500	.3740	122	80	68	2,0	40	10
2249180	B978A09700	9,700	.3819	122	80	68	2,0	40	10
2050230	B978A09800	9,800	.3858	122	80	68	2,1	40	10
1913630	B978A10000	10,000	.3937	122	80	68	2,1	40	10

(continued)



(B978A • -8 x D – continued)



● first choice
○ alternate choice

grade KC7315		D1 diameter							
order #	catalogue #	mm	in	L	L3	L4 max	L5	LS	D
1913631	B978A10200	10,200	.4016	141	94	79	2,2	45	12
2264939	B978A10300	10,300	.4055	141	94	79	2,2	45	12
1913632	B978A10500	10,500	.4134	141	94	79	2,2	45	12
1985985	B978A10800	10,800	.4252	141	94	79	2,3	45	12
1913633	B978A11000	11,000	.4331	141	94	79	2,3	45	12
2658408	B978A11113	11,113	.4375	141	94	79	2,4	45	12
2045616	B978A11400	11,400	.4488	141	94	79	2,4	45	12
1913634	B978A11500	11,500	.4528	141	94	79	2,4	45	12
2044606	B978A11800	11,800	.4646	141	94	79	2,5	45	12
1913635	B978A12000	12,000	.4724	141	94	79	2,5	45	12
1913636	B978A12500	12,500	.4921	155	108	91	2,7	45	14
2658412	B978A12700	12,700	.5000	155	108	91	2,7	45	14
1913637	B978A13000	13,000	.5118	155	108	91	2,8	45	14
1913638	B978A13500	13,500	.5315	155	108	91	2,9	45	14
1913639	B978A14000	14,000	.5512	155	108	91	3,0	45	14
1913640	B978A14500	14,500	.5709	171	121	101	3,1	48	16
1913641	B978A15000	15,000	.5906	171	121	101	3,2	48	16
2428744	B978A15300	15,300	.6024	171	121	101	3,3	48	16
2264901	B978A15800	15,800	.6220	171	121	101	3,4	48	16
2658414	B978A15875	15,875	.6250	171	121	101	3,4	48	16
1913643	B978A16000	16,000	.6299	171	121	101	3,4	48	16
1913644	B978A16500	16,500	.6496	185	135	113	3,5	48	18
1913645	B978A17000	17,000	.6693	185	135	113	3,6	48	18
1913646	B978A17500	17,500	.6890	185	135	113	3,7	48	18
1913647	B978A18000	18,000	.7087	185	135	113	3,9	48	18
1913649	B978A19000	19,000	.7480	200	148	124	4,1	50	20
1913651	B978A20000	20,000	.7874	200	148	124	4,3	50	20

NOTE: The point angle on B978 series is 132°.

nominal size range	Tolerance • Metric	
	D1 tolerance m7	D tolerance h6
>3-6	0,004/0,016	0,000/-0,008
>6-10	0,006/0,021	0,000/-0,009
>10-18	0,007/0,025	0,000/-0,011
>18-25,4	0,008/0,029	0,000/-0,013

■ Kenna Universal™ Drills • B97_Series • Grade KC7315™ • Through Coolant • Drill Diameters 2–20mm • Metric

Material Group														
	Cutting Speed – vc				Metric									
	Range – m/min				Recommended Feed Rate (f) by Diameter									
	min	Starting Value	max		2,0	3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0	
P	0	80	120	160	mm/r	0,04–0,10	0,06–0,12	0,07–0,14	0,09–0,19	0,11–0,22	0,13–0,26	0,15–0,30	0,19–0,36	0,24–0,46
	1	70	100	140	mm/r	0,05–0,12	0,07–0,14	0,08–0,16	0,11–0,22	0,13–0,26	0,15–0,31	0,18–0,35	0,22–0,42	0,28–0,54
	2	90	120	140	mm/r	0,05–0,12	0,07–0,14	0,08–0,16	0,12–0,22	0,14–0,26	0,17–0,31	0,20–0,35	0,24–0,42	0,31–0,53
	3	60	80	100	mm/r	0,06–0,13	0,08–0,15	0,09–0,17	0,13–0,23	0,15–0,28	0,19–0,33	0,22–0,38	0,26–0,47	0,34–0,59
	4	50	80	100	mm/r	0,06–0,13	0,07–0,15	0,08–0,17	0,12–0,23	0,14–0,28	0,17–0,33	0,19–0,38	0,23–0,47	0,29–0,59
	5	50	60	80	mm/r	0,06–0,12	0,08–0,13	0,10–0,15	0,12–0,19	0,16–0,24	0,20–0,27	0,24–0,30	0,28–0,38	0,32–0,44
	6	40	50	70	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,08–0,14	0,10–0,18	0,13–0,22	0,14–0,24	0,18–0,32	0,23–0,41
M	1	30	40	50	mm/r	0,03–0,06	0,04–0,07	0,05–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20
	2	40	50	60	mm/r	0,03–0,07	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,14	0,10–0,16	0,12–0,18	0,14–0,20	0,16–0,22
	3	30	40	50	mm/r	0,03–0,06	0,04–0,07	0,05–0,09	0,08–0,11	0,09–0,12	0,10–0,14	0,12–0,16	0,14–0,18	0,16–0,20
K	1	80	120	170	mm/r	0,09–0,17	0,11–0,22	0,12–0,24	0,16–0,31	0,20–0,38	0,23–0,44	0,25–0,49	0,31–0,60	0,38–0,74
	2	80	110	140	mm/r	0,11–0,15	0,12–0,16	0,13–0,19	0,16–0,25	0,20–0,31	0,23–0,36	0,25–0,40	0,31–0,48	0,38–0,60
	3	80	100	130	mm/r	0,07–0,15	0,08–0,17	0,09–0,19	0,12–0,25	0,14–0,30	0,17–0,35	0,19–0,40	0,24–0,48	0,30–0,60
N	1	90	230	315	mm/r	0,06–0,13	0,08–0,14	0,10–0,16	0,12–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,48
	2	90	225	270	mm/r	0,06–0,12	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,44	0,32–0,52
	3	90	180	270	mm/r	0,11–0,14	0,12–0,14	0,13–0,16	0,14–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,44
	4	90	135	180	mm/r	0,06–0,12	0,08–0,16	0,01–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,40	0,32–0,48
S	1	10	25	30	mm/r	0,02–0,05	0,03–0,06	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,13	0,10–0,14	0,12–0,16	0,14–0,18
	2	10	20	25	mm/r	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
	3	10	25	30	mm/r	0,02–0,03	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15
	4	10	25	40	mm/r	0,02–0,03	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16





	Drill/Insert/Body Series	grade	standard						hole tolerance	First Choice Range		
			● first choice ○ alternate choice							diameter range		drilling depth L/D1
			P	M	K	N	S	H		D1 mm	D1 inch	
										min-max	min-max	
Modular Drills — Economic drilling with high performance and the repeatability of indexable inserts												
KenTIP™ FS: For smaller diameters. Easy front clamping and disposable Inserts												
	KenTIP FS inserts	HPG	KCP15A	●	○				IT9-IT11	8,0–26,0	.315–1.0236	—
		HPL	KCMS15		●							
		HPC	KC7410			●						
	KenTIP FS bodies	SS (Metric)	—						IT9-IT11	8,0 ≤ Ø < 19,999	.315 ≤ Ø < .7873	3 x D–5 x D
		SCF (Metric)	—									
KSEM™ — For medium to larger diameters. Very robust pocket and regrindable inserts												
	KSEM inserts	HPG	KC7315	●	○				IT9-IT11	12,50–35,00	.4921–1.3780	—
		HPG	KCPM45	●	○							
		HPL	KCMS15		●							
		FEGM	KCPM40	●	○	○		○				
	KSEM bodies	WN/WD (Metric)						IT9-IT11	12,50 ≤ Ø < 34,00	.4921 ≤ Ø < 1.3386	3 x D–10 x D selected diameters only	
KSEM PLUS™ — High-performance drilling for the largest diameters												
	KSEM PLUS heads	A1 Style							IT9-IT11	30,00 < Ø ≤ 70,00	1.1811 < Ø ≤ 2.7559	selected diameters only
		B1 Style										
	KSEM PLUS centre inserts	HPG	KC7315	●	●	○	○		IT9-IT11	13,00–40,00mm PDD reference only		—
	DFR™ inserts	DFR GD	KCU25	●	○	●	○	○		DFR inserts for A1 heads with FDS28		
		DFR GD	KCU40	●	○	○	○	●		28,00–31,00	1.1024–1.2204	
		DFR MD	KC7140	●	●	○	○	○				
		DFR LD	KC7225	○	○	●	●	○				
	DFT™ inserts	DFT HP	KCU25	●	○	●	○	○		DFT inserts for A1 heads FDS32 and above		
		DFT HP	KCU40	●	○	○	○	●		31,75–101,40	1.2500–4.0000	
		DFT DS	KCU25	●	●		○	○				
		DFT DS	KCU40	●	○							
	DFC™ inserts (B1 Heads)	DFC HP	KCU25	●	○	●	○	○		DFC inserts for B1 heads, all FDS sizes		
		DFC HP	KCU40	●	○	○	○	●	28,00–101,40	1.1024–4.0000		
		DFC DS	KCU25	●	●							
		DFC DS	KCU40	●	●		○	○				
	DPA guide pads (B1 Heads)	DPA	KCU40	●	●	●	●	●	Available for all standard B1 head diameters			
		KSEM PLUS bodies										
	KSEM PLUS bodies	WD (Metric)								28,00 ≤ Ø ≤ 70,00	1.1024 ≤ Ø ≤ 2.7559	3–10 x D selected diameters only

*Not all intermediate sizes available in First Choice.







> KenTIP™ FS

The Perfect Fusion of a Solid Carbide and an Indexable Drill

The new modular drill KenTIP FS covers more applications and provides better performance than any other modular system, delivering substantial cost savings and process simplifications on your shop floor.

3-point geometries, 3 high-performance grades, 2 shank styles
 3 x D and 5 x D drilling depths.
 Applicable in steel and stainless steel, and cast iron.

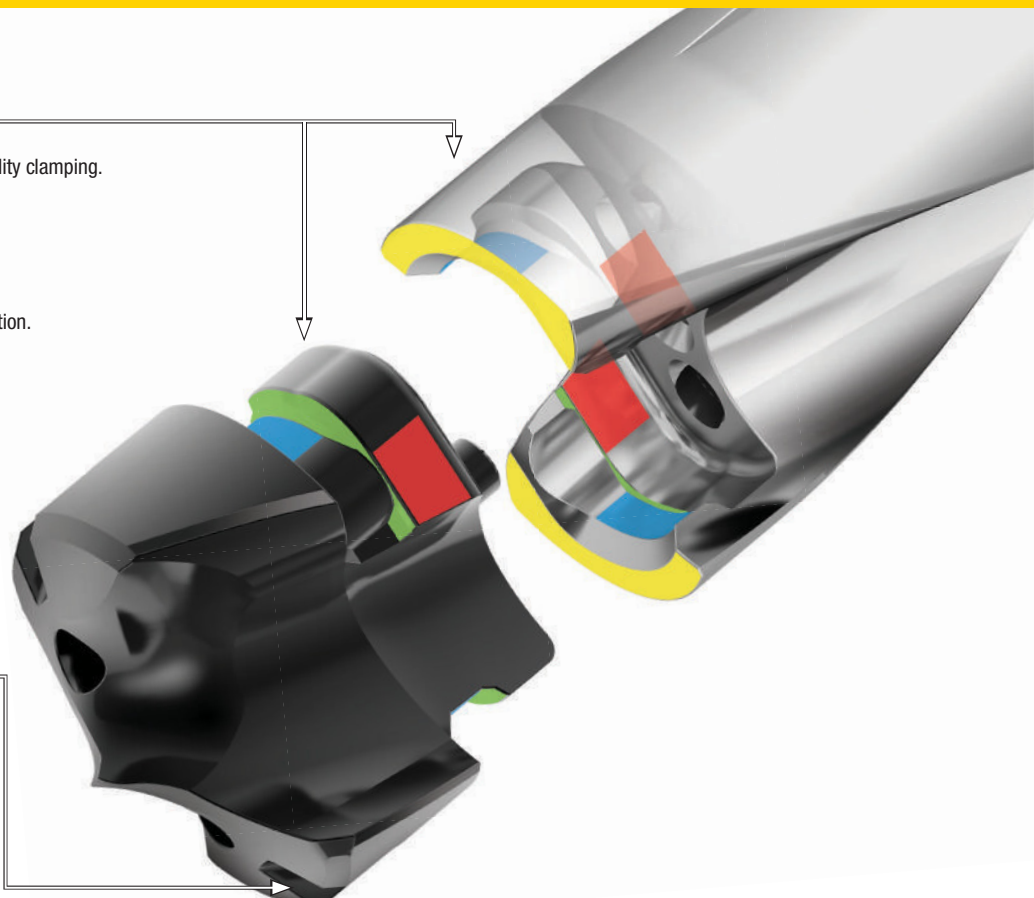
Intelligent Interface

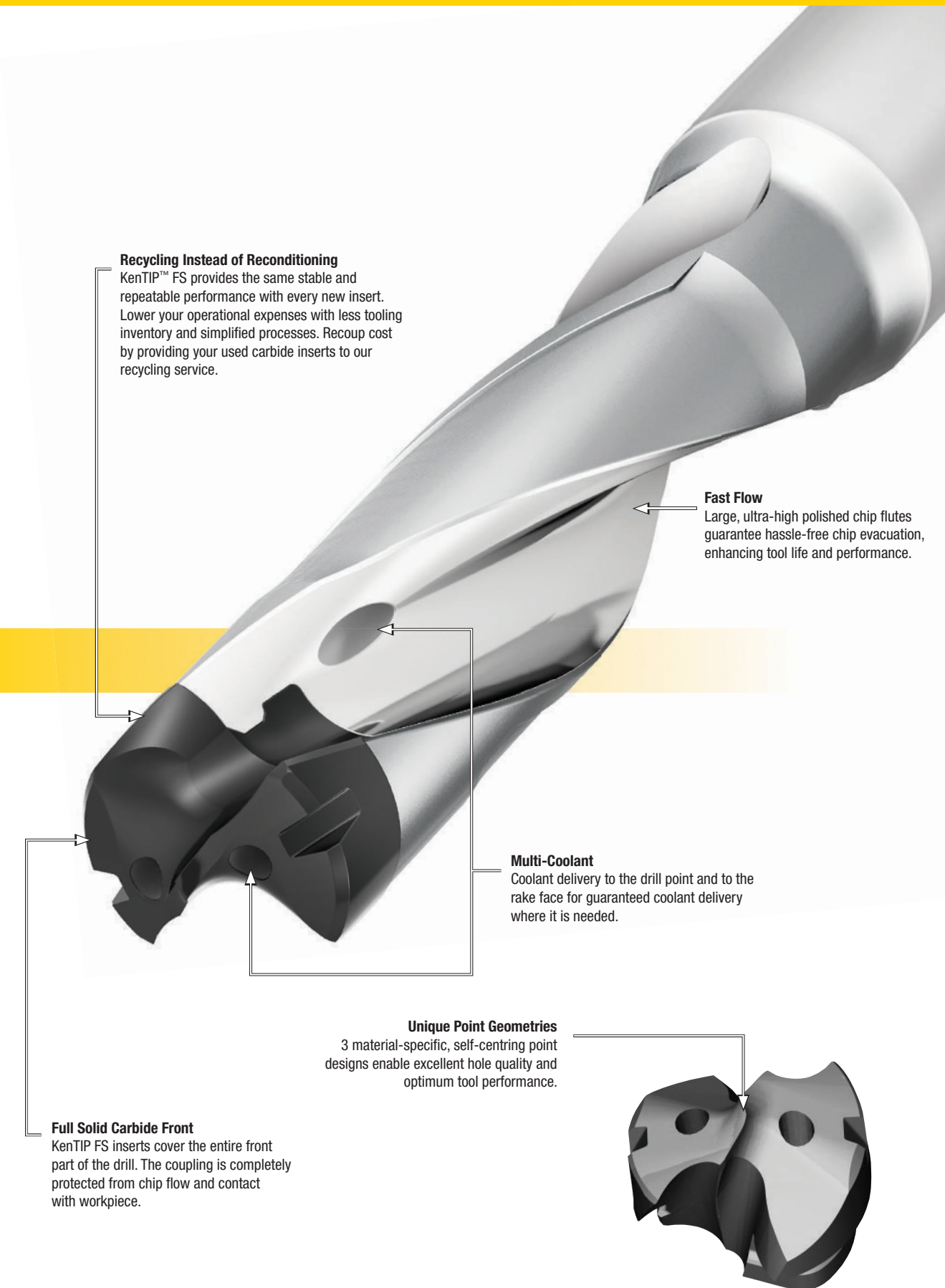
-  Taper interface uniquely designed for highest rigidity clamping.
-  Retention lock prevents insert pullout.
-  Large bearing surface positioned for transmission of highest torsional loads without pocket deformation.
-  Large face contact surface.

Maximum performance and long tool life, even in unstable conditions.

Quick Release

Every drill body comes with a KenTIP smart wrench. Insert exchange in the machine becomes easy and saves idle time. And that saves money.





Recycling Instead of Reconditioning
KenTIP™ FS provides the same stable and repeatable performance with every new insert. Lower your operational expenses with less tooling inventory and simplified processes. Recoup cost by providing your used carbide inserts to our recycling service.

Fast Flow
Large, ultra-high polished chip flutes guarantee hassle-free chip evacuation, enhancing tool life and performance.

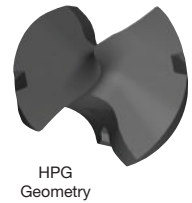
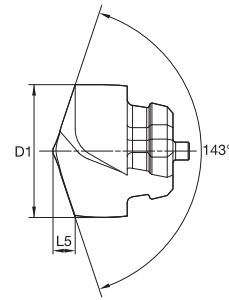
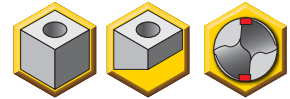
Multi-Coolant
Coolant delivery to the drill point and to the rake face for guaranteed coolant delivery where it is needed.

Unique Point Geometries
3 material-specific, self-centring point designs enable excellent hole quality and optimum tool performance.

Full Solid Carbide Front
KenTIP FS inserts cover the entire front part of the drill. The coupling is completely protected from chip flow and contact with workpiece.



- HPG-point geometry for steels.
- Great positioning and centring capabilities for drilling without precentring, even in deeper holes.
- KCP15A™ is an AlTiN PVD monolayer coating.
- Enhanced thermal stability.
- Excellent balance between toughness and wear resistance.
- Without internal coolant.



■ KenTIP FS Inserts • HPG KCP15A • No Internal Coolant Channels



- first choice
- alternate choice

grade KCP15A		D1		L5		SSC
order #	catalogue #	mm	in	mm	in	
6388596	KTFSS08000HPGM	8,000	.3150	1,800	.0709	F
6388611	KTFSS08500HPGM	8,500	.3346	1,890	.0744	G
6388617	KTFSS08700HPGM	8,700	.3425	1,920	.0756	G
6388628	KTFSS09000HPGM	9,000	.3543	2,010	.0791	H
6388642	KTFSS09100HPGM	9,100	.3583	2,030	.0799	H
6388648	KTFSS09300HPGM	9,300	.3661	2,060	.0811	H
6388654	KTFSS09500HPGM	9,500	.3740	2,100	.0827	I
6388670	KTFSS10000HPGM	10,000	.3937	2,220	.0874	J
6388678	KTFSS10200HPGM	10,200	.4016	2,250	.0886	J
6388682	KTFSS10300HPGM	10,300	.4055	2,270	.0894	J
6388686	KTFSS10400HPGM	10,400	.4094	2,290	.0902	J
6388688	KTFSS10490HPGM	10,490	.4130	2,300	.0906	J
6388690	KTFSS10500HPGM	10,500	.4134	2,310	.0909	K
6388692	KTFSS10600HPGM	10,600	.4173	2,330	.0917	K
6388694	KTFSS10700HPGM	10,700	.4213	2,340	.0921	K
6388698	KTFSS10800HPGM	10,800	.4252	2,360	.0929	K
6388702	KTFSS11000HPGM	11,000	.4331	2,430	.0957	L
6388708	KTFSS11200HPGM	11,200	.4409	2,460	.0969	L
6388710	KTFSS11300HPGM	11,300	.4449	2,480	.0976	L
6388712	KTFSS11400HPGM	11,400	.4488	2,500	.0984	L
6388714	KTFSS11500HPGM	11,500	.4528	2,520	.0992	M
6388722	KTFSS11800HPGM	11,800	.4646	2,570	.1012	M
6388728	KTFSS12000HPGM	12,000	.4724	2,640	.1039	N
6388730	KTFSS12100HPGM	12,100	.4764	2,650	.1043	N
6388732	KTFSS12200HPGM	12,200	.4803	2,670	.1051	N
6388734	KTFSS12304HPGM	12,304	.4844	2,690	.1059	N
6388738	KTFSS12474HPGM	12,474	.4911	2,720	.1071	N
6388740	KTFSS12500HPGM	12,500	.4921	2,730	.1075	O
6388742	KTFSS12600HPGM	12,600	.4961	2,740	.1079	O
6388744	KTFSS12700HPGM	12,700	.5000	2,760	.1087	O
6388746	KTFSS12800HPGM	12,800	.5039	2,780	.1094	O
6388751	KTFSS13000HPGM	13,000	.5118	2,850	.1122	P
6388753	KTFSS13096HPGM	13,096	.5156	2,860	.1126	P
6388759	KTFSS13300HPGM	13,300	.5236	2,900	.1142	P
6388767	KTFSS13500HPGM	13,500	.5315	2,930	.1154	Q
6388769	KTFSS13600HPGM	13,600	.5354	2,950	.1161	Q
6388773	KTFSS13800HPGM	13,800	.5433	2,980	.1173	Q
6388775	KTFSS13891HPGM	13,891	.5469	3,000	.1181	Q
6388781	KTFSS14000HPGM	14,000	.5512	3,050	.1201	R
6388784	KTFSS14100HPGM	14,100	.5551	3,070	.1209	R
6388786	KTFSS14200HPGM	14,200	.5591	3,090	.1217	R
6388789	KTFSS14300HPGM	14,300	.5630	3,100	.1220	R
6388792	KTFSS14500HPGM	14,500	.5709	3,140	.1236	S
6388793	KTFSS14600HPGM	14,600	.5748	3,160	.1244	S
6388798	KTFSS14800HPGM	14,800	.5827	3,190	.1256	S
6388800	KTFSS15000HPGM	15,000	.5906	3,260	.1283	T
6388822	KTFSS15100HPGM	15,100	.5945	3,280	.1291	T
6388824	KTFSS15300HPGM	15,300	.6024	3,310	.1303	T
6388829	KTFSS15500HPGM	15,500	.6102	3,340	.1315	T
6388831	KTFSS15700HPGM	15,700	.6181	3,380	.1331	T
6388832	KTFSS15800HPGM	15,800	.6220	3,390	.1335	T
6388420	KTFSS16000HPGM	16,000	.6299	3,480	.1370	U

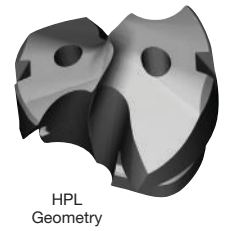
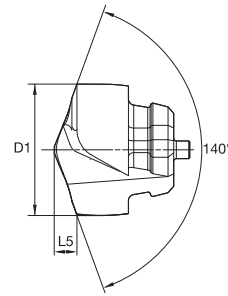
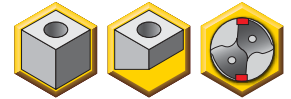
grade KCP15A		D1		L5		SSC
order #	catalogue #	mm	in	mm	in	
6388534	KTFSS16100HPGM	16,100	.6339	3,500	.1378	U
6388536	KTFSS16271HPGM	16,271	.6406	3,530	.1390	U
6388537	KTFSS16300HPGM	16,300	.6417	3,530	.1390	U
6388540	KTFSS16500HPGM	16,500	.6496	3,570	.1406	U
6388542	KTFSS16600HPGM	16,600	.6535	3,580	.1409	U
6388546	KTFSS16700HPGM	16,700	.6575	3,600	.1417	U
6388548	KTFSS16800HPGM	16,800	.6614	3,620	.1425	U
6388552	KTFSS17000HPGM	17,000	.6693	3,660	.1441	V
6388558	KTFSS17200HPGM	17,200	.6772	3,690	.1453	V
6388568	KTFSS17500HPGM	17,500	.6890	3,740	.1472	V
6388570	KTFSS17600HPGM	17,600	.6929	3,760	.1480	V
6388572	KTFSS17700HPGM	17,700	.6969	3,770	.1484	V
6388574	KTFSS17800HPGM	17,800	.7008	3,790	.1492	V
6388579	KTFSS18000HPGM	18,000	.7087	3,890	.1531	W
6388587	KTFSS18300HPGM	18,300	.7205	3,940	.1551	W
6388591	KTFSS18500HPGM	18,500	.7283	3,980	.1567	W
6388593	KTFSS18600HPGM	18,600	.7323	3,990	.1571	W
6388600	KTFSS18800HPGM	18,800	.7402	4,030	.1587	W
6388601	KTFSS18900HPGM	18,900	.7441	4,040	.1591	W
6388603	KTFSS19000HPGM	19,000	.7480	4,070	.1602	X
6388605	KTFSS19050HPGM	19,050	.7500	4,080	.1606	X
6388607	KTFSS19100HPGM	19,100	.7520	4,090	.1610	X
6388609	KTFSS19200HPGM	19,200	.7559	4,100	.1614	X
6388618	KTFSS19300HPGM	19,300	.7598	4,120	.1622	X
6388627	KTFSS19500HPGM	19,500	.7677	4,150	.1634	X
6388643	KTFSS19800HPGM	19,800	.7795	4,200	.1654	X
6388645	KTFSS19845HPGM	19,845	.7813	4,210	.1657	X
6388649	KTFSS20000HPGM	20,000	.7874	4,310	.1697	Y
6388659	KTFSS20500HPGM	20,500	.8071	4,390	.1728	Y
6388673	KTFSS21000HPGM	21,000	.8268	4,480	.1764	Z
6388685	KTFSS21500HPGM	21,500	.8465	4,560	.1795	Z
6388695	KTFSS22000HPGM	22,000	.8661	4,720	.1858	ZA
6388705	KTFSS22500HPGM	22,500	.8858	4,800	.1890	ZA
6388715	KTFSS23000HPGM	23,000	.9055	4,890	.1925	ZB
6388727	KTFSS23500HPGM	23,500	.9252	4,980	.1961	ZB
6388739	KTFSS24000HPGM	24,000	.9449	5,130	.2020	ZC
6388750	KTFSS24500HPGM	24,500	.9646	5,210	.2051	ZC
6388762	KTFSS25000HPGM	25,000	.9843	5,300	.2087	ZD
6388790	KTFSS26000HPGM	26,000	1.0236	5,470	.2154	ZD

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

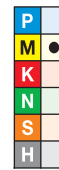
KenTIP FS HPG Geometry Tolerance

D1 metric	tolerance k8
6	0,000/+0,018
>6-10	0,000/+0,022
>10-18	0,000/+0,027
>18-26	0,000/+0,033

- HPL-point geometry for stainless steels.
- Forms 2 chips per cutting edge for an uninterrupted and smooth chip flow.
- KCMS15™ is an AlTiN PVD monolayer coating.
- Prevents edge build-up, which delivers superior hole quality.
- Very high metal removal rates.
- With internal coolant.



■ KenTIP FS Inserts • HPL KCMS15 • With Internal Coolant Channels



- first choice
- alternate choice

grade KCMS15		D1		L5		SSC
order #	catalogue #	mm	in	mm	in	
6370992	KTFST08000HPLM	8,000	.3150	1,720	.0677	F
6370994	KTFST08100HPLM	8,100	.3189	1,740	.0685	F
6371006	KTFST08500HPLM	8,500	.3346	1,820	.0717	G
6371031	KTFST09000HPLM	9,000	.3543	1,930	.0760	H
6371045	KTFST10000HPLM	10,000	.3937	2,130	.0839	J
6371047	KTFST10200HPLM	10,200	.4016	2,170	.0854	J
6371048	KTFST10300HPLM	10,300	.4055	2,190	.0862	J
6371051	KTFST10500HPLM	10,500	.4134	2,230	.0878	K
6371054	KTFST10800HPLM	10,800	.4252	2,290	.0902	K
6371056	KTFST11000HPLM	11,000	.4331	2,340	.0921	L
6371061	KTFST11500HPLM	11,500	.4528	2,440	.0961	M
6371065	KTFST12000HPLM	12,000	.4724	2,540	.1000	N
6371068	KTFST12500HPLM	12,500	.4921	2,640	.1039	O
6371069	KTFST12700HPLM	12,700	.5000	2,680	.1055	O
6371072	KTFST13000HPLM	13,000	.5118	2,740	.1079	P
6371076	KTFST13500HPLM	13,500	.5315	2,840	.1118	Q
6371080	KTFST14000HPLM	14,000	.5512	2,950	.1161	R
6371084	KTFST14300HPLM	14,300	.5630	3,000	.1181	R
6371086	KTFST14500HPLM	14,500	.5709	3,050	.1201	S
6371089	KTFST15000HPLM	15,000	.5906	3,150	.1240	T
6371112	KTFST15500HPLM	15,500	.6102	3,240	.1276	T
6370906	KTFST16000HPLM	16,000	.6299	3,350	.1319	U
6370916	KTFST16500HPLM	16,500	.6496	3,450	.1358	U
6370920	KTFST17000HPLM	17,000	.6693	3,550	.1398	V

grade KCMS15		D1		L5		SSC
order #	catalogue #	mm	in	mm	in	
6370926	KTFST17500HPLM	17,500	.6890	3,650	.1437	V
6370929	KTFST18000HPLM	18,000	.7087	3,760	.1480	W
6370937	KTFST19000HPLM	19,000	.7480	3,960	.1559	X
6370944	KTFST19253HPLM	19,253	.7580	4,000	.1575	X
6370955	KTFST19500HPLM	19,500	.7677	4,050	.1594	X
6370957	KTFST19845HPLM	19,845	.7813	4,120	.1622	X
6370972	KTFST20000HPLM	20,000	.7874	4,160	.1638	Y
6370975	KTFST20500HPLM	20,500	.8071	4,250	.1673	Y
6370981	KTFST21000HPLM	21,000	.8268	4,360	.1717	Z
6370985	KTFST21500HPLM	21,500	.8465	4,450	.1752	Z
6370988	KTFST22000HPLM	22,000	.8661	4,560	.1795	ZA
6370993	KTFST22500HPLM	22,500	.8858	4,660	.1835	ZA
6370996	KTFST23000HPLM	23,000	.9055	4,760	.1874	ZB
6370999	KTFST23500HPLM	23,500	.9252	4,860	.1913	ZB
6371005	KTFST24000HPLM	24,000	.9449	4,960	.1953	ZC
6371008	KTFST24500HPLM	24,500	.9646	5,060	.1992	ZC
6371011	KTFST25000HPLM	25,000	.9843	5,170	.2035	ZD
6371038	KTFST26000HPLM	26,000	1.0236	5,370	.2114	ZD

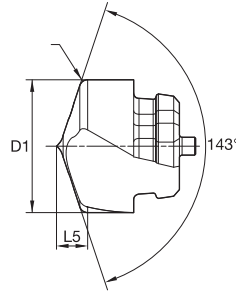
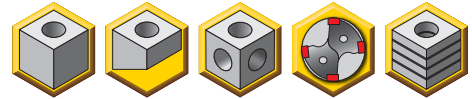
SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

KenTIP FS HPL Geometry
Tolerance

D1 metric	tolerance k8
6	0,000/+0,018
>6-10	0,000/+0,022
>10-18	0,000/+0,027
>18-26	0,000/+0,033



- HPC-point geometry for all cast irons.
- 4-margin lands ensure hole straightness.
- Large corner radius prevents chipping and reduces exit burrs when drilling through holes.
- KC7410 is an AlCr PVD multilayer coating.
- Superb wear resistance.
- With internal coolant.



■ KenTIP FS Inserts • HPC KC7410 • With Internal Coolant Channels



- first choice
- alternate choice

grade KC7410		D1		L5		SSC
order #	catalog #	mm	in	mm	in	
6370885	KTFST08000HPCM	8,000	.3150	1,850	.0728	F
6370888	KTFST08500HPCM	8,500	.3346	1,960	.0772	G
6370892	KTFST09000HPCM	9,000	.3543	2,080	.0819	H
6370900	KTFST10000HPCM	10,000	.3937	2,320	.0913	J
6370902	KTFST10200HPCM	10,200	.4016	2,350	.0925	J
6370903	KTFST10300HPCM	10,300	.4055	2,370	.0933	J
6370905	KTFST10500HPCM	10,500	.4134	2,430	.0957	K
6370914	KTFST10800HPCM	10,800	.4252	2,480	.0976	K
6370915	KTFST11000HPCM	11,000	.4331	2,550	.1004	L
6370917	KTFST11100HPCM	11,100	.4370	2,570	.1012	L
6370923	KTFST11500HPCM	11,500	.4528	2,660	.1047	M
6370930	KTFST12000HPCM	12,000	.4724	2,780	.1094	N
6370934	KTFST12500HPCM	12,500	.4921	2,900	.1142	O
6370936	KTFST12700HPCM	12,700	.5000	2,930	.1154	O
6370938	KTFST13000HPCM	13,000	.5118	3,020	.1189	P
6370948	KTFST13500HPCM	13,500	.5315	3,130	.1232	Q
6370958	KTFST14000HPCM	14,000	.5512	3,250	.1280	R
6370976	KTFST14500HPCM	14,500	.5709	3,360	.1323	S
6370995	KTFST15000HPCM	15,000	.5906	3,490	.1374	T
6371010	KTFST15500HPCM	15,500	.6102	3,570	.1406	T
6371016	KTFST15800HPCM	15,800	.6220	3,620	.1425	T
6370147	KTFST16000HPCM	16,000	.6299	3,730	.1469	U
6370353	KTFST16500HPCM	16,500	.6496	3,810	.1500	U
6370355	KTFST16600HPCM	16,600	.6535	3,830	.1508	U

grade KC7410		D1		L5		SSC
order #	catalog #	mm	in	mm	in	
6370357	KTFST17000HPCM	17,000	.6693	3,950	.1555	V
6370360	KTFST17200HPCM	17,200	.6772	3,980	.1567	V
6370363	KTFST17500HPCM	17,500	.6890	4,030	.1587	V
6370368	KTFST18000HPCM	18,000	.7087	4,190	.1650	W
6370381	KTFST18500HPCM	18,500	.7283	4,280	.1685	W
6370384	KTFST19000HPCM	19,000	.7480	4,410	.1736	X
6370390	KTFST20000HPCM	20,000	.7874	4,660	.1835	Y
6370403	KTFST20500HPCM	20,500	.8071	4,740	.1866	Y
6370405	KTFST21000HPCM	21,000	.8268	4,880	.1921	Z
6370407	KTFST21500HPCM	21,500	.8465	4,970	.1957	Z
6370408	KTFST22000HPCM	22,000	.8661	5,130	.2020	ZA
6370411	KTFST22500HPCM	22,500	.8858	5,210	.2051	ZA
6370412	KTFST23000HPCM	23,000	.9055	5,350	.2106	ZB
6370414	KTFST23500HPCM	23,500	.9252	5,430	.2138	ZB
6370416	KTFST24000HPCM	24,000	.9449	5,630	.2217	ZC
6370417	KTFST24500HPCM	24,500	.9646	5,720	.2252	ZC
6370419	KTFST25000HPCM	25,000	.9843	5,870	.2311	ZD
6370425	KTFST26000HPCM	26,000	1.0236	6,030	.2374	ZD

NOTE: SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

■ Modular Drill Carbide Insert Blades • KenTIP™ FS • HPG Geometry • Grade KCP15A™ •
 No Internal Coolant Channels on the Insert • Through Coolant on the Body • Metric

Material Group	Cutting Speed – vc			Metric									
	Range – m/min			Recommended Feed Rate per Rev									
	min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	26,0	
P	0	95	125	175	mm/r	0,11–0,22	0,13–0,30	0,15–0,37	0,17–0,41	0,19–0,45	0,24–0,52	0,28–0,60	0,29–0,62
	1	90	130	170	mm/r	0,11–0,22	0,13–0,30	0,15–0,37	0,17–0,41	0,19–0,45	0,24–0,52	0,28–0,60	0,29–0,62
	2	100	140	180	mm/r	0,11–0,26	0,13–0,34	0,15–0,41	0,17–0,45	0,19–0,49	0,24–0,56	0,28–0,64	0,29–0,62
	3	60	100	130	mm/r	0,11–0,31	0,12–0,36	0,14–0,41	0,16–0,44	0,18–0,46	0,23–0,51	0,30–0,56	0,31–0,58
	4	60	100	130	mm/r	0,11–0,31	0,12–0,36	0,14–0,41	0,16–0,44	0,18–0,46	0,23–0,51	0,25–0,56	0,26–0,58
	5	60	80	100	mm/r	0,1–0,22	0,11–0,28	0,12–0,34	0,14–0,37	0,16–0,40	0,20–0,46	0,24–0,52	0,25–0,54
K	1	80	120	170	mm/r	0,14–0,34	0,16–0,39	0,19–0,45	0,23–0,50	0,26–0,58	0,30–0,64	0,36–0,76	0,37–0,79
	2	80	110	120	mm/r	0,14–0,34	0,16–0,39	0,19–0,45	0,23–0,50	0,26–0,58	0,30–0,64	0,36–0,76	0,37–0,79
	3	50	80	100	mm/r	0,13–0,27	0,15–0,33	0,17–0,37	0,19–0,42	0,21–0,46	0,28–0,54	0,32–0,63	0,33–0,66

■ Modular Drill Carbide Insert Blades • KenTIP FS • HPL Geometry • Grade KCMS15™ •
 With Internal Coolant Channels • Through Coolant • Metric

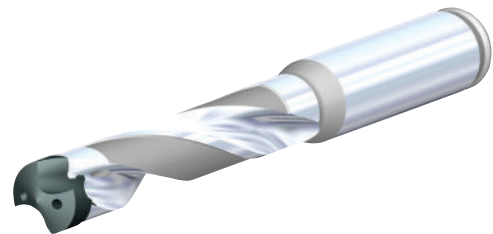
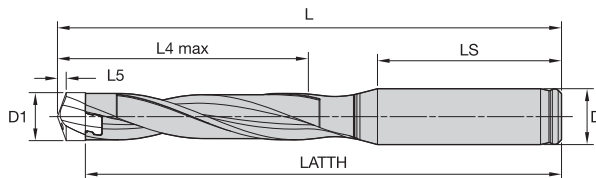
Material Group	Cutting Speed – vc			Metric									
	Range – m/min			Recommended Feed Rate per Rev									
	min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	26,0	
M	1	50	60	90	mm/r	0,08–0,15	0,09–0,18	0,11–0,2	0,12–0,22	0,13–0,24	0,16–0,28	0,19–0,32	0,20–0,33
	2	30	60	90	mm/r	0,08–0,15	0,09–0,18	0,11–0,2	0,12–0,22	0,13–0,24	0,16–0,28	0,19–0,32	0,20–0,33
	3	20	50	60	mm/r	0,08–0,15	0,09–0,18	0,11–0,2	0,12–0,22	0,13–0,24	0,16–0,28	0,19–0,32	0,20–0,33

■ Modular Drill Carbide Insert Blades • KenTIP FS • HPC Geometry • Grade KC7410™ •
 With Internal Coolant Channels • Through Coolant • Metric

Material Group	Cutting Speed – vc			Metric									
	Range – m/min			Recommended Feed Rate per Rev									
	min	Starting Value	max		8,0	10,0	12,0	14,0	16,0	20,0	24,0	26,0	
K	1	100	175	200	mm/r	0,14–0,34	0,16–0,39	0,19–0,45	0,23–0,5	0,26–0,58	0,3–0,64	0,36–0,76	0,37–0,79
	2	100	160	180	mm/r	0,14–0,34	0,16–0,39	0,19–0,45	0,23–0,5	0,26–0,58	0,3–0,64	0,36–0,76	0,37–0,79
	3	70	85	120	mm/r	0,13–0,27	0,15–0,33	0,17–0,37	0,19–0,42	0,21–0,46	0,28–0,54	0,32–0,63	0,33–0,66



- KenTIP FS toolholder with straight cylindrical round metric shank.
- Multi-coolant provides an advanced coolant channel layout with four coolant exits in each holder.
- Each tool body is shipped with related insert wrench.



Straight Round Shank (SS Shank)

■ KenTIP FS Round Shank • 3 x D • Metric



3 x D

D1

D1 max



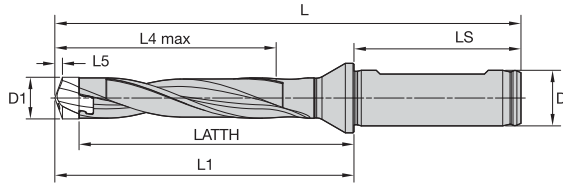
order #	catalogue #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
6389366	KTFS080R03SS10M	8,000	.3150	8,499	.3346	76,4	81	26	41	10	F	170.306
6389367	KTFS085R03SS10M	8,500	.3347	8,999	.3543	77,1	82	27	41	10	G	170.306
6389368	KTFS090R03SS10M	9,000	.3544	9,499	.3739	78,8	84	29	41	10	H	170.306
6389369	KTFS095R03SS10M	9,500	.3740	9,999	.3936	79,5	85	30	41	10	I	170.306
6371340	KTFS100R03SS12M	10,000	.3937	10,499	.4133	88,2	94	32	46	12	J	170.307
6371961	KTFS105R03SS12M	10,500	.4134	10,999	.4330	88,9	95	33	46	12	K	170.307
6371962	KTFS110R03SS12M	11,000	.4331	11,499	.4527	90,6	97	35	46	12	L	170.307
6371963	KTFS115R03SS12M	11,500	.4528	11,999	.4724	91,3	98	36	46	12	M	170.307
6371964	KTFS120R03SS14M	12,000	.4725	12,499	.4921	95,0	102	38	46	14	N	170.308
6371965	KTFS125R03SS14M	12,500	.4922	12,999	.5117	95,8	103	39	46	14	O	170.308
6371966	KTFS130R03SS14M	13,000	.5118	13,499	.5314	97,5	105	41	46	14	P	170.308
6371967	KTFS135R03SS14M	13,500	.5315	13,999	.5511	98,2	106	42	46	14	Q	170.308
6371968	KTFS140R03SS16M	14,000	.5512	14,499	.5708	103,9	112	44	49	16	R	170.309
6371969	KTFS145R03SS16M	14,500	.5709	14,999	.5905	104,6	113	45	49	16	S	170.309
6371970	KTFS150R03SS16M	15,000	.5906	15,999	.6299	107,3	116	48	49	16	T	170.309
6371971	KTFS160R03SS16M	16,000	.6300	16,999	.6692	109,7	119	51	49	16	U	170.309
6371972	KTFS170R03SS20M	17,000	.6693	17,999	.7086	117,1	127	54	51	20	V	170.314
6389147	KTFS180R03SS20M	18,000	.7087	18,999	.7480	119,6	130	57	51	20	W	170.314
6389148	KTFS190R03SS20M	19,000	.7481	19,999	.7873	122,0	133	60	51	20	X	170.314

NOTE: Toolholder dimensions:

- L: Total length of drill
- L4: Max. drilling depth
- L5: Protruding length (Insert specific. See related insert pages)
- LATTH: Pocket seat reference length
- LS: Shank length

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

- KenTIP FS Tool Holder with Flanged Cylindrical shank and 0° Flat. Metric Shank.
- KenTIP FS modular drills offer performance commonly achieved with solid carbide drills. The rigid pocket seat allows flexible usage and very high holder tool life.
- KenTIP FS drilling system uses disposable inserts — no reconditioning cost, consistent performance, and significantly reduced tool logistics compared to regrindable drilling solutions.
- MultiCoolant provides an advanced coolant channel layout with four coolant exits in each holder.
- Each Tool body is shipped with related insert wrench.



Flanged Shank with Flat (SCF Shank)

■ KenTIP FS™ Flanged Shank with Flat • 3 x D • Metric



3 x D



order #	catalogue #	D1		D1 max		LATTH	L	L1	L4 max	LS	D	SSC	KenTIP wrench
		mm	in	mm	in								
6389436	KTFS080R03SCF12M	8,000	.3150	8,499	.3346	42,4	92	47	26	45	12	F	170.306
6389437	KTFS085R03SCF12M	8,500	.3347	8,999	.3543	43,1	93	48	27	45	12	G	170.306
6389438	KTFS090R03SCF12M	9,000	.3544	9,499	.3739	44,8	95	50	29	45	12	H	170.306
6389439	KTFS095R03SCF12M	9,500	.3740	9,999	.3936	45,5	96	51	30	45	12	I	170.306
6372514	KTFS100R03SCF16M	10,000	.3937	10,499	.4133	50,2	104	56	32	48	16	J	170.307
6372515	KTFS105R03SCF16M	10,500	.4134	10,999	.4330	50,9	105	57	33	48	16	K	170.307
6372516	KTFS110R03SCF16M	11,000	.4331	11,499	.4527	52,6	107	59	35	48	16	L	170.307
6372517	KTFS115R03SCF16M	11,500	.4528	11,999	.4724	53,3	108	60	36	48	16	M	170.307
6372518	KTFS120R03SCF16M	12,000	.4725	12,499	.4921	55,0	110	62	38	48	16	N	170.308
6372519	KTFS125R03SCF16M	12,500	.4922	12,999	.5117	55,8	111	63	39	48	16	O	170.308
6372520	KTFS130R03SCF16M	13,000	.5118	13,499	.5314	57,5	113	65	41	48	16	P	170.308
6372591	KTFS135R03SCF16M	13,500	.5315	13,999	.5511	58,2	114	66	42	48	16	Q	170.308
6372592	KTFS140R03SCF16M	14,000	.5512	14,499	.5708	59,9	116	68	44	48	16	R	170.309
6372593	KTFS145R03SCF16M	14,500	.5709	14,999	.5905	60,6	117	69	45	48	16	S	170.309
6372594	KTFS150R03SCF20M	15,000	.5906	15,999	.6299	66,3	125	75	48	50	20	T	170.309
6372595	KTFS160R03SCF20M	16,000	.6300	16,999	.6692	68,7	128	78	51	50	20	U	170.309
6372596	KTFS170R03SCF20M	17,000	.6693	17,999	.7086	71,1	131	81	54	50	20	V	170.314
6389279	KTFS180R03SCF25M	18,000	.7087	18,999	.7480	76,6	143	87	57	56	25	W	170.314
6389280	KTFS190R03SCF25M	19,000	.7481	19,999	.7873	79,0	146	90	60	56	25	X	170.314
6389281	KTFS200R03SCF25M	20,000	.7874	20,999	.8267	81,4	149	93	63	56	25	Y	170.314
6389282	KTFS210R03SCF25M	21,000	.8268	21,999	.8661	83,8	152	96	66	56	25	Z	170.314
6389283	KTFS220R03SCF25M	22,000	.8662	22,999	.9054	86,2	155	99	69	56	25	ZA	170.314
6389284	KTFS230R03SCF25M	23,000	.9055	23,999	.9448	88,7	158	102	72	56	25	ZB	170.314
6389285	KTFS240R03SCF25M	24,000	.9449	24,999	.9842	91,1	161	105	75	56	25	ZC	170.314
6389286	KTFS250R03SCF25M	25,000	.9843	26,000	1.0236	93,5	164	108	78	56	25	ZD	170.314

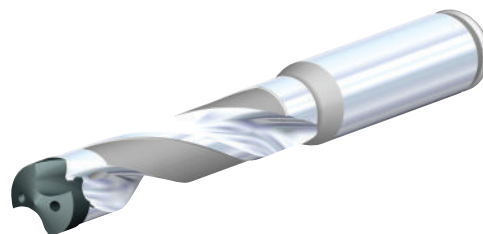
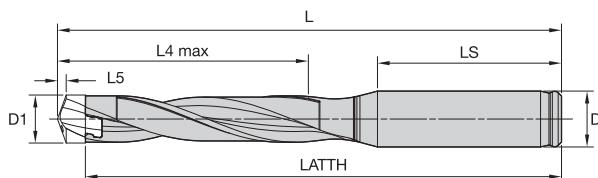
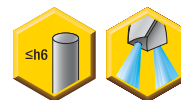
NOTE: Toolholder dimensions:

- L: Total length of drill
- L1: Drill length including flange
- L4: Max. drilling depth
- L5: Protruding length (Insert specific. See related insert pages)
- LATTH: Pocket seat reference length
- LS: Shank length

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.



- KenTIP FS toolholder with straight cylindrical round metric shank.
- 12 x D holders feature a flanged shank for improved stiffness.
- Multi-coolant provides an advanced coolant channel layout with four coolant exits in each holder.
- Each tool body is shipped with related insert wrench.



Straight Round Shank (SS Shank)

■ KenTIP FS Round Shank • 5 x D • Metric



5 x D

D1

D1 max



order #	catalogue #	mm	in	mm	in	LATTH	L	L4 max	LS	D	SSC	KenTIP wrench
6389385	KTFS080R05SS10M	8,000	.3150	8,499	.3346	93,4	98	43	41	10	F	170.306
6389386	KTFS085R05SS10M	8,500	.3347	8,999	.3543	95,1	100	45	41	10	G	170.306
6389387	KTFS090R05SS10M	9,000	.3544	9,499	.3739	97,8	103	48	41	10	H	170.306
6389388	KTFS095R05SS10M	9,500	.3740	9,999	.3936	99,5	105	50	41	10	I	170.306
6371973	KTFS100R05SS12M	10,000	.3937	10,499	.4133	109,2	115	53	46	12	J	170.307
6371974	KTFS105R05SS12M	10,500	.4134	10,999	.4330	110,9	117	55	46	12	K	170.307
6371975	KTFS110R05SS12M	11,000	.4331	11,499	.4527	113,6	120	58	46	12	L	170.307
6371976	KTFS115R05SS12M	11,500	.4528	11,999	.4724	115,3	122	60	46	12	M	170.307
6371977	KTFS120R05SS14M	12,000	.4725	12,499	.4921	120,0	127	63	46	14	N	170.308
6371978	KTFS125R05SS14M	12,500	.4922	12,999	.5117	121,8	129	65	46	14	O	170.308
6371979	KTFS130R05SS14M	13,000	.5118	13,499	.5314	124,5	132	68	46	14	P	170.308
6371980	KTFS135R05SS14M	13,500	.5315	13,999	.5511	126,2	134	70	46	14	Q	170.308
6371981	KTFS140R05SS16M	14,000	.5512	14,499	.5708	132,9	141	73	49	16	R	170.309
6371982	KTFS145R05SS16M	14,500	.5709	14,999	.5905	134,6	143	75	49	16	S	170.309
6371983	KTFS150R05SS16M	15,000	.5906	15,999	.6299	139,3	148	80	49	16	T	170.309
6371984	KTFS160R05SS16M	16,000	.6300	16,999	.6692	143,7	153	85	49	16	U	170.309
6371985	KTFS170R05SS20M	17,000	.6693	17,999	.7086	153,1	163	90	51	20	V	170.314
6389149	KTFS180R05SS20M	18,000	.7087	18,999	.7480	157,6	168	95	51	20	W	170.314
6389150	KTFS190R05SS20M	19,000	.7481	19,999	.7873	162,0	173	100	51	20	X	170.314

NOTE: Toolholder dimensions:

L: Total length of drill

L4: Max. drilling depth

L5: Protruding length (Insert specific. See related insert pages)

LATTH: Pocket seat reference length

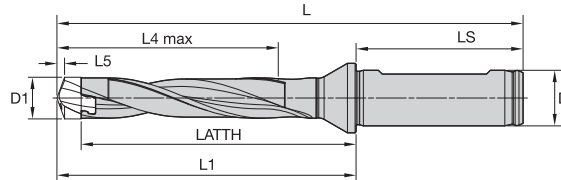
LS: Shank length

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

- KenTIP FS Tool Holder with Flanged Cylindrical shank and 0° Flat. Metric Shank.
- KenTIP FS modular drills offer performance commonly achieved with solid carbide drills. The rigid pocket seat allows flexible usage and very high holder tool life.
- KenTIP FS drilling system uses disposable inserts — no reconditioning cost, consistent performance, and significantly reduced tool logistics compared to regrindable drilling solutions.
- MultiCoolant provides an advanced coolant channel layout with four coolant exits in each holder.
- Each Tool body is shipped with related insert wrench.



Flanged Shank with Flat (SCF Shank)



■ KenTIP FS™ Flanged Shank with Flat • 5 x D • Metric



5 x D

order #	catalogue #	D1		D1 max		LATTH	L	L1	L4 max	LS	D	SSC	KenTIP rench
		mm	in	mm	in								
6389440	KTFS080R05SCF12M	8,000	.3150	8,499	.3346	59,4	109	64	43	45	12	F	170.306
6389441	KTFS085R05SCF12M	8,500	.3347	8,999	.3543	61,1	111	66	45	45	12	G	170.306
6389442	KTFS090R05SCF12M	9,000	.3544	9,499	.3739	63,8	114	69	48	45	12	H	170.306
6389443	KTFS095R05SCF12M	9,500	.3740	9,999	.3936	65,5	116	71	50	45	12	I	170.306
6372597	KTFS100R05SCF16M	10,000	.3937	10,499	.4133	71,2	125	77	53	48	16	J	170.307
6372598	KTFS105R05SCF16M	10,500	.4134	10,999	.4330	72,9	127	79	55	48	16	K	170.307
6372599	KTFS110R05SCF16M	11,000	.4331	11,499	.4527	75,6	130	82	58	48	16	L	170.307
6372600	KTFS115R05SCF16M	11,500	.4528	11,999	.4724	77,3	132	84	60	48	16	M	170.307
6372601	KTFS120R05SCF16M	12,000	.4725	12,499	.4921	80,0	135	87	63	48	16	N	170.308
6372602	KTFS125R05SCF16M	12,500	.4922	12,999	.5117	81,8	137	89	65	48	16	O	170.308
6372603	KTFS130R05SCF16M	13,000	.5118	13,499	.5314	84,5	140	92	68	48	16	P	170.308
6372604	KTFS135R05SCF16M	13,500	.5315	13,999	.5511	86,2	142	94	70	48	16	Q	170.308
6372605	KTFS140R05SCF16M	14,000	.5512	14,499	.5708	88,9	145	97	73	48	16	R	170.309
6372606	KTFS145R05SCF16M	14,500	.5709	14,999	.5905	90,6	147	99	75	48	16	S	170.309
6372607	KTFS150R05SCF20M	15,000	.5906	15,999	.6299	98,3	157	107	80	50	20	T	170.309
6372608	KTFS160R05SCF20M	16,000	.6300	16,999	.6692	102,7	162	112	85	50	20	U	170.309
6372609	KTFS170R05SCF20M	17,000	.6693	17,999	.7086	107,1	167	117	90	50	20	V	170.314
6389287	KTFS180R05SCF25M	18,000	.7087	18,999	.7480	114,6	181	125	95	56	25	W	170.314
6389288	KTFS190R05SCF25M	19,000	.7481	19,999	.7873	119,0	186	130	100	56	25	X	170.314
6389289	KTFS200R05SCF25M	20,000	.7874	20,999	.8267	123,4	191	135	105	56	25	Y	170.314
6389290	KTFS210R05SCF25M	21,000	.8268	21,999	.8661	127,8	196	140	110	56	25	Z	170.314
6389311	KTFS220R05SCF25M	22,000	.8662	22,999	.9054	132,2	201	145	115	56	25	ZA	170.314
6389312	KTFS230R05SCF25M	23,000	.9055	23,999	.9448	136,7	206	150	120	56	25	ZB	170.314
6389313	KTFS240R05SCF25M	24,000	.9449	24,999	.9842	141,1	211	155	125	56	25	ZC	170.314
6389314	KTFS250R05SCF25M	25,000	.9843	26,000	1.0236	145,5	216	160	130	56	25	ZD	170.314

NOTE: Toolholder dimensions:

- L: Total length of drill
- L1: Drill length including flange
- L4: Max. drilling depth
- L5: Protruding length (Insert specific. See related insert pages)
- LATTH: Pocket seat reference length
- LS: Shank length

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.



➤ KSEM™ Modular Drill System

Primary Application

The KSEM™ modular drill system offers extended length and drilling diameters beyond the KenTIP™ modular drill system. The KSEM system enables very aggressive feed rates in many applications to enable very high productivity levels. It offers a very robust pocket for its exchangeable inserts to increase tool life for both steel holder and carbide tip. This makes the KSEM system a very economic and reliable system for drilling in the intermediate diameter range. Hole depths of 10 x D and drilling diameters from 12,5–35mm (.4921–1.5748") are covered by our standard tooling range. Various grades are available for drilling applications in almost any materials.



Features and Benefits

HP Drill-Point styles

- Low thrust prevents workpiece flexing.
- Excellent centring capabilities.
- Application specific selection of geometries for unmatched performance.

Strong Pocket, Easy Insert Change

- Robust pocket design for increased insert and holder life.
- Four-wall pocket provides insert stability.
- Requires only a simple wrench for insert removal.

Regrindable Inserts

- All geometries except SPL can be reconditioned to improve tool economy.
- Quick and reliable regrinding services offered by Kennametal and our partners.

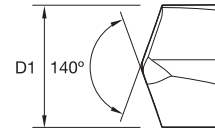
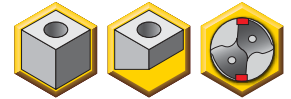
Tailored Grades

- KC7315™ grade TiAlN-based PVD multilayer coating for high cutting speeds, primarily in steel applications.
- KCPM45™ grade multilayer TiAlN coated, very tough carbide substrate. Improved chipping resistance in demanding machining conditions.
- KCSM15™ grade AlTiN-based PVD coating for the demands of drilling stainless steels.

Drill Body Portfolio

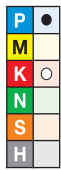
- Standard 3, 5, 7, and 10 x D tool bodies with round shanks (inch) and Whistle Notch shanks (metric) available.
- Flanged shanks with 2 flats and entry for external coolant supply in 3 x D.
- Only selected KSEM bodies included in First Choice programme.

- KSEM KC7315™ HPG cutting edges enable high metal removal rates and superior tool life for steel applications.
- HPG geometry works with low cutting and feed forces and provides very good centring. Reinforced cutting edges and good chip forming improve tool life due to high wear and edge chipping resistance.
- KC7315 is a fine-grain carbide with a TiAlN-based PVD multilayer coating. Its high wear resistance enables very high cutting speeds in stable conditions.
- KC7315 HPG cutting edges are perfectly suited to drill alloyed and high-alloy steels.
- Use KC7315 HPG cutting edges as an alternative to cast iron materials.



HPG

■ KSEM Inserts • HPG KC7315



grade KC7315

D1

order #	catalogue #	mm	in	SSC
2449924	KSEM1250HPGM	12,500	.4921	C
2499723	KSEM1260HPGM	12,600	.4961	C
2499727	KSEM1300HPGM	13,000	.5118	C
2499730	KSEM1350HPGM	13,500	.5310	C
2499731	KSEM1360HPGM	13,600	.5354	B
2499735	KSEM1400HPGM	14,000	.5512	B
2499611	KSEM1429HPGM	14,290	.5630	B
2499740	KSEM1450HPGM	14,500	.5709	B
2499744	KSEM1500HPGM	15,000	.5906	A
2499843	KSEM1508HPGM	15,080	.5937	A
2499746	KSEM1530HPGM	15,300	.6024	A
2499748	KSEM1550HPGM	15,500	.6102	A
2499749	KSEM1560HPGM	15,600	.6142	A
2499753	KSEM1600HPGM	16,000	.6299	1
2499846	KSEM1609HPGM	16,090	.6340	1
2499757	KSEM1650HPGM	16,500	.6496	1
2499759	KSEM1700HPGM	17,000	.6693	1
2487433	KSEM1750HPGM	17,500	.6890	1
3027980	KSEM1760HPGM	17,600	.6929	1
2499763	KSEM1800HPGM	18,000	.7087	1
2499852	KSEM1826HPGM	18,260	.7189	2
2499765	KSEM1850HPGM	18,500	.7283	2
3097295	KSEM1860HPGM	18,600	.7323	2
2499853	KSEM1865HPGM	18,650	.7340	2
2499767	KSEM1900HPGM	19,000	.7480	2
4050332	KSEM1932HPGM	19,320	.7606	2
2499771	KSEM1950HPGM	19,500	.7677	2
2504223	KSEM1970HPGM	19,700	.7756	2
2450909	KSEM2000HPGM	20,000	.7874	3
2499858	KSEM2024HPGM	20,240	.7969	3



grade KC7315

- first choice
- alternate choice

order #	catalogue #	mm	in	SSC
2465988	KSEM2050HPGM	20,500	.8071	3
2499775	KSEM2100HPGM	21,000	.8268	3
2887393	KSEM2120HPGM	21,200	.8346	3
2499777	KSEM2150HPGM	21,500	.8460	3
3120318	KSEM2170HPGM	21,700	.8543	3
2499779	KSEM2200HPGM	22,000	.8661	3
2499782	KSEM2250HPGM	22,500	.8858	4
2449518	KSEM2300HPGM	23,000	.9055	4
3016028	KSEM2305HPGM	23,050	.9075	4
2499786	KSEM2400HPGM	24,000	.9449	4
2499787	KSEM2450HPGM	24,500	.9646	5
2499789	KSEM2500HPGM	25,000	.9843	5
2499791	KSEM2550HPGM	25,500	1.0039	5
2499868	KSEM2567HPGM	25,670	1.0106	5
2449473	KSEM2600HPGM	26,000	1.0236	5
2499869	KSEM2619HPGM	26,190	1.0310	6
2494500	KSEM2650HPGM	26,500	1.0433	6
2499870	KSEM2659HPGM	26,590	1.0470	6
2499795	KSEM2700HPGM	27,000	1.0630	6
2499796	KSEM2750HPGM	27,500	1.0827	6
2499798	KSEM2800HPGM	28,000	1.1024	6
2499802	KSEM2900HPGM	29,000	1.1417	7
2499803	KSEM2950HPGM	29,500	1.1614	7
2449475	KSEM3000HPGM	30,000	1.1811	7
2499810	KSEM3100HPGM	31,000	1.2205	8
2499813	KSEM3200HPGM	32,000	1.2598	8
2494501	KSEM3300HPGM	33,000	1.2992	9
2499820	KSEM3400HPGM	34,000	1.3386	9
2466477	KSEM3500HPGM	35,000	1.3780	9

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

Tolerance HPG • Metric

D1 metric	tolerance h8
12,5-18	+0,000/-0,027
>18-30	+0,000/-0,033
>30-40	+0,000/-0,039



■ Modular Drill Carbide Insert Blades • KSEM™ • HPG Geometry • Grade KC7315™ • Through Coolant • Metric

Material Group	Cutting Speed – vc			Metric							
	Range – m/min			Recommended Feed Rate (f) by Diameter							
	min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	35,0	
P	1	75	110	140	mm/r	0,15–0,34	0,17–0,40	0,19–0,45	0,25–0,58	0,29–0,66	0,33–0,76
	2	90	120	150	mm/r	0,15–0,34	0,17–0,40	0,19–0,45	0,25–0,58	0,29–0,66	0,33–0,76
	3	50	75	100	mm/r	0,15–0,28	0,17–0,34	0,19–0,40	0,25–0,51	0,29–0,58	0,33–0,66
	4	55	75	95	mm/r	0,12–0,31	0,14–0,34	0,16–0,40	0,20–0,51	0,23–0,58	0,26–0,66
	5	50	65	80	mm/r	0,09–0,17	0,11–0,20	0,12–0,23	0,15–0,28	0,17–0,32	0,20–0,36
	6	50	65	80	mm/r	0,12–0,25	0,14–0,29	0,16–0,32	0,20–0,42	0,23–0,47	0,26–0,54
K	1	90	135	175	mm/r	0,17–0,35	0,21–0,42	0,25–0,48	0,31–0,59	0,37–0,70	0,43–0,81
	2	90	110	125	mm/r	0,17–0,33	0,21–0,41	0,25–0,48	0,31–0,59	0,37–0,70	0,43–0,81
	3	40	95	125	mm/r	0,18–0,36	0,20–0,41	0,21–0,44	0,23–0,48	0,25–0,53	0,27–0,57

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

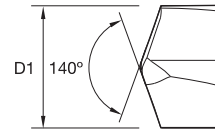
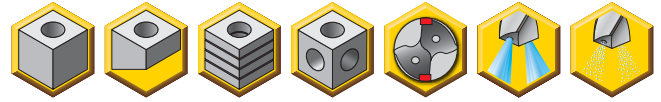
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

- KSEM KCPM45™ HPG cutting edges provide increased productivity and improved tool life in steel in difficult conditions.
- HPG geometry works with low cutting and feed forces and provides very good centring. Reinforced cutting edges and good chip forming improve tool life due to high wear and edge chipping resistance.
- KCPM45 combines a very tough, fine-grain carbide substrate with an advanced multilayer TiAlN coating. It is capable of machining steel even in the most demanding conditions.
- Material snap back, stacked plates, cross holes, and inclined exits are some examples of where KCPM45 HPG edges will do a great job in your operations.
- Use KCPM45 HPG cutting edges as an effective alternative in stainless steel as well.



■ KSEM Inserts • HPG KCPM45



grade KCPM45

order #	catalogue #	D1		SSC
		mm	in	
5626642	KSEM1250HPGM	12,500	.4921	C
5626644	KSEM1300HPGM	13,000	.5118	C
5397387	KSEM1400HPGM	14,000	.5512	B
5626703	KSEM1500HPGM	15,000	.5906	A
5626708	KSEM1600HPGM	16,000	.6299	1
5626710	KSEM1650HPGM	16,500	.6496	1
5626711	KSEM1700HPGM	17,000	.6693	1
5626713	KSEM1750HPGM	17,500	.6890	1
5397474	KSEM1800HPGM	18,000	.7087	1
5397476	KSEM1900HPGM	19,000	.7480	2
5397481	KSEM1950HPGM	19,500	.7677	2
5397483	KSEM2000HPGM	20,000	.7874	3
5397485	KSEM2100HPGM	21,000	.8268	3
5397486	KSEM2200HPGM	22,000	.8661	3



grade KCPM45

- first choice
- alternate choice

order #	catalogue #	D1		SSC
		mm	in	
5397488	KSEM2300HPGM	23,000	.9055	4
5397490	KSEM2400HPGM	24,000	.9449	4
5397491	KSEM2500HPGM	25,000	.9843	5
5397497	KSEM2600HPGM	26,000	1.0236	5
5626731	KSEM2650HPGM	26,500	1.0433	6
5397499	KSEM2700HPGM	27,000	1.0630	6
5397500	KSEM2800HPGM	28,000	1.1024	6
5515226	KSEM2900HPGM	29,000	1.1417	7
5397502	KSEM3000HPGM	30,000	1.1811	7
5626740	KSEM3050HPGM	30,500	1.2008	8
5626742	KSEM3100HPGM	31,000	1.2205	8
5397505	KSEM3200HPGM	32,000	1.2598	8
5397506	KSEM3300HPGM	33,000	1.2992	9

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

Tolerance HPG • Metric

D1 metric	tolerance h8
12,5-18	+0,000/-0,027
>18-30	+0,000/-0,033
>30-40	+0,000/-0,039



■ Modular Drill Carbide Insert Blades • KSEM™ • HPG Geometry • Grade KCPM45™ • Through Coolant • Metric



Material Group	Cutting Speed – vc Range – m/min			Metric							
	min	Starting Value	max	Recommended Feed Rate (f) by Diameter							
					12,5	16,0	20,0	25,4	32,0	40,0	
P	1	100	110	120	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
	2	80	95	110	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
	3	65	70	80	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
M	1	30	60	90	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	2	30	50	90	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31

■ Modular Drill Carbide Insert Blades • KSEM • HPG Geometry • Grade KCPM45 • MQL* • Metric



Material Group	Cutting Speed – vc Range – m/min			Metric							
	min	Starting Value	max	Recommended Feed Rate (f) by Diameter							
					12,5	16,0	20,0	25,4	32,0	40,0	
P	1	60	70	80	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
	2	50	60	70	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
	3	65	45	80	mm/r	0,15–0,31	0,17–0,36	0,19–0,41	0,25–0,53	0,29–0,60	0,33–0,69
M	1	30	40	50	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	2	25	30	35	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	20	25	30	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31

*Recommended for drilling depths ≤1.5 x D.

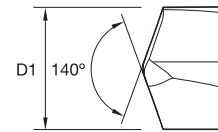
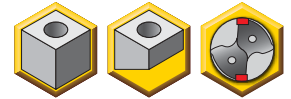
TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

- KSEM KCMS15™ HPL cutting edges provide perfect results and very high productivity in stainless steel.
- HPL geometry forms two chips per cutting edge for an uninterrupted, smooth chip flow. Very high metal removal rates and a reliable drilling process up to 10 x D makes HPL the superior solution for drilling in stainless steels.
- Grade KCMS15 features a high Al content TiAlN coating on a universal fine-grain carbide. Its excellent oxidation stability and carbide toughness enables a high level of wear resistance in austenitic and other stainless steels.



HPL

■ KSEM Inserts • HPL KCMS15



KCMS15		D1		SSC
		mm	in	
3380488	KSEM1250HPLM	12,500	.4921	C
3381103	KSEM1300HPLM	13,000	.5118	C
3381104	KSEM1350HPLM	13,500	.5310	C
3381108	KSEM1400HPLM	14,000	.5512	B
3381113	KSEM1450HPLM	14,500	.5709	B
3381114	KSEM1460HPLM	14,600	.5748	A
3381117	KSEM1500HPLM	15,000	.5906	A
3381123	KSEM1600HPLM	16,000	.6299	1
3381126	KSEM1615HPLM	16,150	.6358	1
3381129	KSEM1650HPLM	16,500	.6496	1
3381131	KSEM1700HPLM	17,000	.6693	1
3381134	KSEM1750HPLM	17,500	.6890	1
3381139	KSEM1800HPLM	18,000	.7087	1
3381146	KSEM1900HPLM	19,000	.7480	2
3381152	KSEM1935HPLM	19,350	.7618	2
3381156	KSEM1984HPLM	19,840	.7810	2
3381157	KSEM2000HPLM	20,000	.7874	3
3381158	KSEM2010HPLM	20,100	.7913	3
3381159	KSEM2024HPLM	20,240	.7970	3
3381163	KSEM2100HPLM	21,000	.8268	3



- first choice
- alternate choice

KCMS15		D1		SSC
		mm	in	
3381169	KSEM2150HPLM	21,500	.8460	3
3381173	KSEM2200HPLM	22,000	.8661	3
3381181	KSEM2277HPLM	22,770	.8965	4
3381183	KSEM2300HPLM	23,000	.9055	4
3381191	KSEM2400HPLM	24,000	.9449	4
3381616	KSEM2500HPLM	25,000	.9843	5
3381620	KSEM2540HPLM	25,400	1.0000	5
3381626	KSEM2565HPLM	25,650	1.0098	5
3381630	KSEM2600HPLM	26,000	1.0236	5
3381635	KSEM2650HPLM	26,500	1.0433	6
3381640	KSEM2700HPLM	27,000	1.0630	6
3381644	KSEM2800HPLM	28,000	1.1024	6
3381172	KSEM2900HPLM	29,000	1.1417	7
3381180	KSEM3000HPLM	30,000	1.1811	7
3381192	KSEM3200HPLM	32,000	1.2598	8

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

Tolerance HPL • Metric

D1 metric	tolerance h8
12,5-18	+0,000/-0,027
>18-30	+0,000/-0,033
>30-40	+0,000/-0,039

Application Data

■ Modular Drill Carbide Insert Blades • KSEM • HPL Geometry • Grade KCMS15 • Through Coolant • Metric

Material Group	Cutting Speed – vc			Metric						
	Range – m/min			Recommended Feed Rate (f) by Diameter						
	min	Starting Value	max	12,5	16,0	20,0	25,4	32,0		
M	1	30	60	90	mm/r	0,09-0,14	0,11-0,17	0,13-0,20	0,16-0,25	0,18-0,28
	2	30	50	90	mm/r	0,09-0,14	0,11-0,17	0,13-0,20	0,16-0,25	0,18-0,28
	3	20	40	60	mm/r	0,09-0,14	0,11-0,17	0,13-0,20	0,16-0,25	0,18-0,28



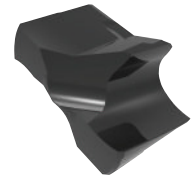
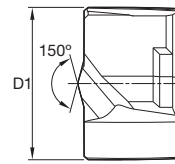
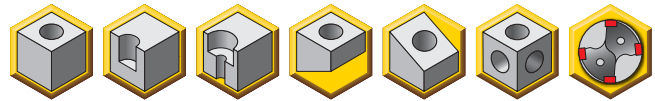
• KSEM FEG flat-bottom inserts create 180° flat holes — only a small cavity remains in the centre of the hole ground. KSEM offers an extraordinarily strong pocket seat for your demanding flat-bottom applications.

• Whether it is a blind hole, a through hole, or if you need to countersink, these inserts are focused on versatility and will support you in many essential drilling applications.

• KSEM FEG inserts feature a small centring point as well as double margin lands for improved guidance and hole straightness. A corner chamfer serves to reduce bur formation and to improve tool life.

• KCPM45™ combines a very tough, fine-grain carbide substrate with an advanced multilayer TiAlN coating. It is capable of machining steel even in the most demanding conditions.

• Use KSEM FEG KCPM45 cutting edges as an effective alternative in cast iron, stainless steel, and high-temp alloys.



■ KSEM Inserts • FEG KCPM45



● first choice
○ alternate choice

order number	catalogue number	Grade	D1		SSC
			mm	in	
6381877	KSEM1300FEGM	KCPM45	13,000	.5118	C
6381879	KSEM1400FEGM	KCPM45	14,000	.5512	B
6381921	KSEM1500FEGM	KCPM45	15,000	.5906	A
5949382	KSEM1600FEGM	KCPM45	16,000	.6299	1
5981500	KSEM1650FEGM	KCPM45	16,500	.6496	1
5981571	KSEM1700FEGM	KCPM45	17,000	.6693	1
5981572	KSEM1750FEGM	KCPM45	17,500	.6890	1
5981573	KSEM1800FEGM	KCPM45	18,000	.7087	1
5981575	KSEM1900FEGM	KCPM45	19,000	.7480	2
5981578	KSEM2000FEGM	KCPM45	20,000	.7874	3
5981579	KSEM2050FEGM	KCPM45	20,500	.8071	3
5981580	KSEM2100FEGM	KCPM45	21,000	.8268	3
5981581	KSEM2150FEGM	KCPM45	21,500	.8465	3
5981582	KSEM2200FEGM	KCPM45	22,000	.8661	3
5981583	KSEM2250FEGM	KCPM45	22,500	.8858	4
5981584	KSEM2300FEGM	KCPM45	23,000	.9055	4
5981585	KSEM2350FEGM	KCPM45	23,500	.9252	4
5981586	KSEM2400FEGM	KCPM45	24,000	.9449	4
5981588	KSEM2500FEGM	KCPM45	25,000	.9843	5
5981591	KSEM2550FEGM	KCPM45	25,500	1.0039	5
5981592	KSEM2600FEGM	KCPM45	26,000	1.0236	5
5981593	KSEM2650FEGM	KCPM45	26,500	1.0433	6
5981594	KSEM2700FEGM	KCPM45	27,000	1.0630	6
5949383	KSEM2800FEGM	KCPM45	28,000	1.1024	6
5981597	KSEM2900FEGM	KCPM45	29,000	1.1417	7
5981598	KSEM2950FEGM	KCPM45	29,500	1.1614	7
5981599	KSEM3000FEGM	KCPM45	30,000	1.1811	7
5981600	KSEM3100FEGM	KCPM45	31,000	1.2205	8

order number	catalogue number	Grade	D1		SSC
			mm	in	
5981602	KSEM3200FEGM	KCPM45	32,000	1.2598	8
5981603	KSEM3300FEGM	KCPM45	33,000	1.2992	9
5981604	KSEM3400FEGM	KCPM45	34,000	1.3386	9
5981605	KSEM3500FEGM	KCPM45	35,000	1.3780	9
5981606	KSEM3600FEGM	KCPM45	36,000	1.4173	9
5981608	KSEM3800FEGM	KCPM45	38,000	1.4961	10
5981610	KSEM3900FEGM	KCPM45	39,000	1.5354	10
5949384	KSEM4000FEGM	KCPM45	40,000	1.5748	10

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

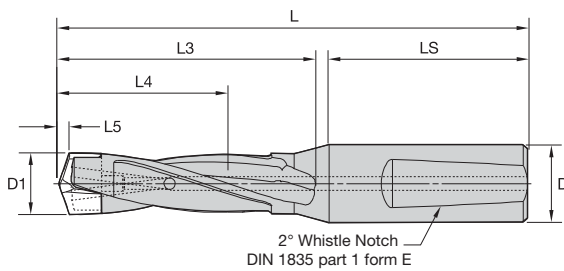
Tolerance FEG • Metric	
D1 metric	tolerance k7
12,5–18	+0,001/+ 0,019
>18–30	+0,002/+ 0,023
>30–40	+0,002/+ 0,027

■ Modular Drill Carbide Insert Blades • KSEM • FEG Geometry • Grade KCPM45™ • Through Coolant • Metric

Material Group	Cutting Speed – vc			Metric							
	Range – m/min			Recommended Feed Rate (f) by Diameter							
	min	Starting Value	max		12,5	16,0	20,0	25,4	32,0	40,0	
P	1	110	140	170	mm/r	0,14–0,23	0,17–0,25	0,19–0,29	0,23–0,38	0,26–0,43	0,33–0,76
	2	100	120	140	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	3	80	100	120	mm/r	0,14–0,20	0,15–0,23	0,17–0,25	0,23–0,34	0,26–0,38	0,33–0,66
	4	70	90	110	mm/r	0,11–0,20	0,13–0,23	0,14–0,25	0,18–0,34	0,21–0,38	0,26–0,66
M	1	40	60	80	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	2	35	55	70	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
K	1	90	135	175	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	2	80	120	140	mm/r	0,17–0,23	0,19–0,25	0,22–0,29	0,29–0,38	0,32–0,43	0,33–0,76
	3	70	110	125	mm/r	0,15–0,24	0,18–0,26	0,21–0,29	0,23–0,37	0,25–0,42	0,27–0,57
S	1	20	40	60	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31
	3	15	30	45	mm/r	0,09–0,14	0,11–0,17	0,13–0,20	0,16–0,25	0,18–0,28	0,21–0,31

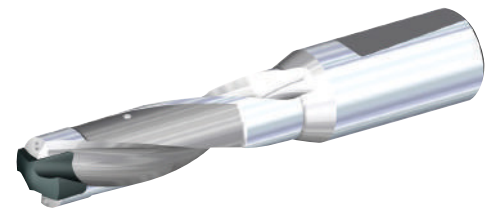
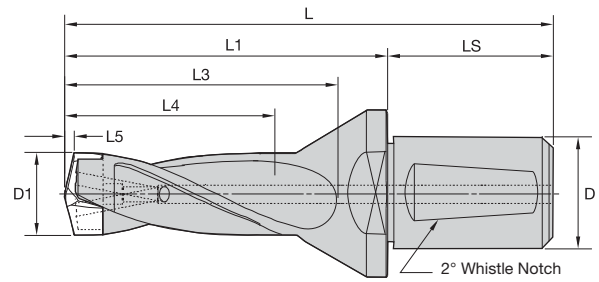


- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.



for diameters < 16mm, DIN 6535 - HE
for diameters > 16mm, DIN 1835 part 1 form E

Whistle Notch shank D1 ≤ 32mm



■ KSEM WN/WD50 Shank • 3 x D • Metric

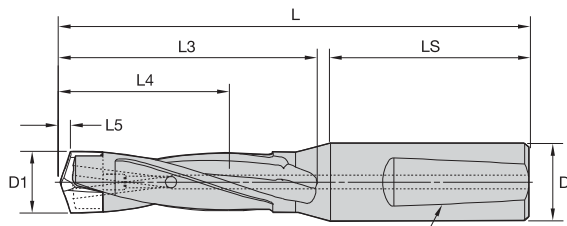
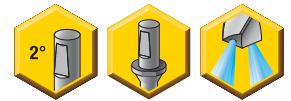


3 x D

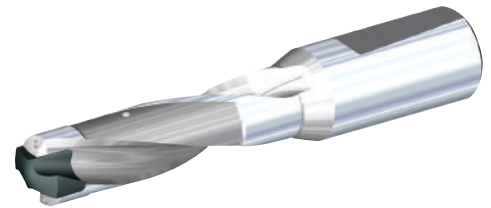
order #	catalogue #	D1		D1 max		L	L3	L1	L4 max	L5	LS	D	SSC	central lock screw
		mm	in	mm	in									
1792295	KSEM140R3WN16M	14,000	.5512	14,500	.5708	111	59	—	42	2,2	48	16	B	364.016
1792298	KSEM150R3WN20M	15,000	.5906	15,500	.6102	122	68	—	48	2,4	50	20	A	364.016
1245980	KSEM160R3WN20M	16,000	.6299	16,500	.6496	122	67	—	48	2,5	50	20	1	364.010
1245986	KSEM165R3WN20M	16,500	.6496	17,000	.6693	130	75	—	54	2,6	50	20	1	364.010
1245991	KSEM170R3WN20M	17,000	.6693	17,500	.6890	130	75	—	54	2,7	50	20	1	364.010
1245995	KSEM175R3WN20M	17,500	.6890	18,000	.7086	130	75	—	54	2,8	50	20	1	364.010
1245999	KSEM180R3WN20M	18,000	.7087	18,000	.7086	130	75	—	54	2,9	50	20	1	364.010
1246003	KSEM185R3WN25M	18,500	.7283	19,000	.7480	144	83	—	60	2,9	56	25	2	364.010
1246007	KSEM190R3WN25M	19,000	.7480	19,500	.7677	144	83	—	60	3,0	56	25	2	364.010
1246011	KSEM195R3WN25M	19,500	.7677	19,999	.7873	144	83	—	60	3,1	56	25	2	364.010
1246014	KSEM200R3WN25M	20,000	.7874	20,500	.8071	153	92	—	60	3,2	56	25	3	364.011
1246022	KSEM210R3WN25M	21,000	.8268	21,500	.8465	153	92	—	66	3,3	56	25	3	364.011
1246031	KSEM220R3WN25M	22,000	.8661	22,000	.8661	153	92	—	66	3,5	56	25	3	364.011
1246034	KSEM225R3WN25M	22,500	.8858	23,000	.9055	161	100	—	72	3,6	56	25	4	364.011
1246041	KSEM235R3WN25M	23,500	.9252	24,000	.9448	161	100	—	72	3,7	56	25	4	364.011
1246046	KSEM240R3WN25M	24,000	.9449	24,000	.9448	161	100	—	72	3,8	56	25	4	364.011
1246051	KSEM245R3WN32M	24,500	.9646	25,000	.9843	174	109	—	78	3,9	60	32	5	364.012
1246055	KSEM250R3WN32M	25,000	.9843	25,500	1.0039	174	109	—	78	3,8	60	32	5	364.012
1246059	KSEM255R3WN32M	25,500	1.0039	26,000	1.0236	174	109	—	78	3,9	60	32	5	364.012
1246063	KSEM260R3WN32M	26,000	1.0236	26,000	1.0236	174	109	—	78	4,0	60	32	5	364.012
1246067	KSEM265R3WN32M	26,500	1.0433	27,000	1.0630	182	117	—	84	4,1	60	32	6	364.012
1246071	KSEM270R3WN32M	27,000	1.0630	27,500	1.0827	182	117	—	84	4,2	60	32	6	364.012
1246079	KSEM280R3WN32M	28,000	1.1024	28,000	1.1023	182	117	—	84	4,3	60	32	6	364.012
1246085	KSEM290R3WN32M	29,000	1.1417	29,500	1.1614	190	125	—	90	4,5	60	32	7	364.013
1246093	KSEM300R3WN32M	30,000	1.1811	30,000	1.1811	190	125	—	90	4,6	60	32	7	364.013
1246102	KSEM310R3WN32M	31,000	1.2205	31,500	1.2402	200	135	—	96	4,8	60	32	8	364.013
1246109	KSEM320R3WN32M	32,000	1.2598	32,000	1.2598	200	135	—	96	4,9	60	32	8	364.013
1749102	KSEM321R3WD50M	32,010	1.2602	33,000	1.2992	220	148	159,00	99	4,9	68	50	9	364.015
1749103	KSEM330R3WD50M	33,000	1.2992	34,000	1.3386	227	148	159,00	99	5,1	68	50	9	364.015
1749106	KSEM340R3WD50M	34,000	1.3386	35,000	1.3780	225	146	157,00	102	5,2	68	50	9	364.015

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.



2° Whistle Notch
DIN 1835 part 1 form E
for diameters < 16mm, DIN 6535 - HE
for diameters > 16mm, DIN 1835 part 1 form E
Whistle Notch shank D1 ≤ 32mm



■ KSEM WN50 Shank • 5 x D • Metric

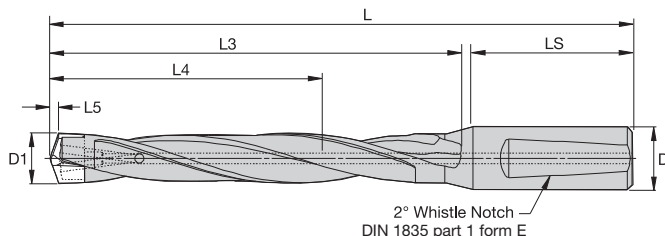


order #	catalogue #	D1		D1 max		L	L3	L4 max	L5	LS	D	SSC	central lock screw
		mm	in	mm	in								
1772747	KSEM125R5WN16M	12,500	.4921	13,000	.5118	139	87	70	2,0	48	16	C	364.017
1792301	KSEM130R5WN16M	13,000	.5120	13,500	.5310	139	87	70	2,1	48	16	C	364.017
1792323	KSEM135R5WN16M	13,500	.5315	13,500	.5314	139	87	70	2,1	48	16	C	364.017
1792302	KSEM136R5WN16M	13,510	.5319	14,000	.5512	139	87	70	2,2	48	16	B	364.016
1772748	KSEM140R5WN16M	14,000	.5512	14,500	.5708	139	87	70	2,2	48	16	B	364.016
1792325	KSEM145R5WN20M	14,500	.5709	14,500	.5708	154	100	80	2,3	50	20	B	364.016
1792326	KSEM146R5WN20M	14,510	.5713	15,000	.5906	154	100	80	2,3	50	20	A	364.016
1772749	KSEM150R5WN20M	15,000	.5906	15,500	.6102	154	100	80	2,4	50	20	A	364.016
1792328	KSEM155R5WN20M	15,500	.6102	15,874	.6249	154	100	80	2,5	50	20	A	364.016
1245983	KSEM160R5WN20M	16,000	.6299	16,500	.6496	154	99	80	2,5	50	20	1	364.010
1245988	KSEM165R5WN20M	16,500	.6496	17,000	.6693	166	111	90	2,6	50	20	1	364.010
1245993	KSEM170R5WN20M	17,000	.6693	17,500	.6890	166	111	90	2,7	50	20	1	364.010
1245997	KSEM175R5WN20M	17,500	.6890	18,000	.7086	166	112	87	2,9	51	20	1	364.010
1246001	KSEM180R5WN20M	18,000	.7087	18,000	.7086	166	111	90	2,9	50	20	1	364.010
1246005	KSEM185R5WN25M	18,500	.7283	19,000	.7480	184	123	100	2,9	56	25	2	364.010
1246008	KSEM190R5WN25M	19,000	.7490	19,500	.7677	184	124	100	3,1	56	25	2	364.010
1246013	KSEM195R5WN25M	19,500	.7677	19,999	.7873	184	123	100	3,1	56	25	2	364.010
1246017	KSEM200R5WN25M	20,000	.7880	20,500	.8071	197	137	100	3,2	56	25	3	364.011
1246021	KSEM205R5WN25M	20,500	.8071	21,000	.8268	197	137	107	3,3	56	25	3	364.011
1246024	KSEM210R5WN25M	21,000	.8268	21,500	.8465	197	137	106	3,7	56	25	3	364.011
1246028	KSEM215R5WN25M	21,500	.8465	22,000	.8661	197	136	110	3,4	56	25	3	364.011
1246032	KSEM220R5WN25M	22,000	.8661	22,000	.8661	197	136	110	3,5	56	25	3	364.011
1246036	KSEM225R5WN25M	22,500	.8858	23,000	.9055	209	148	120	3,6	56	25	4	364.011
1246040	KSEM230R5WN25M	23,000	.9055	23,500	.9252	209	148	120	3,7	56	25	4	364.011
1246044	KSEM235R5WN25M	23,500	.9252	24,000	.9448	209	148	120	3,7	56	25	4	364.011
1246048	KSEM240R5WN25M	24,000	.9449	24,000	.9448	209	148	120	3,8	56	25	4	364.011
1246053	KSEM245R5WN32M	24,500	.9646	25,000	.9843	226	161	130	3,9	60	32	5	364.012
1246057	KSEM250R5WN32M	25,000	.9843	25,500	1.0039	226	161	130	3,8	60	32	5	364.012
1246065	KSEM260R5WN32M	26,000	1.0236	26,000	1.0236	226	161	130	4,0	60	32	5	364.012
1246069	KSEM265R5WN32M	26,500	1.0433	27,000	1.0630	238	173	140	4,1	60	32	6	364.012
1246073	KSEM270R5WN32M	27,000	1.0630	27,500	1.0827	238	173	140	4,2	60	32	6	364.012
1246077	KSEM275R5WN32M	27,500	1.0827	28,000	1.1023	238	173	140	4,2	60	32	6	364.012
1246081	KSEM280R5WN32M	28,000	1.1024	28,000	1.1023	238	173	140	4,3	60	32	6	364.012
1246083	KSEM285R5WN32M	28,500	1.1220	29,000	1.1417	250	185	150	4,4	60	32	7	364.013
1246088	KSEM290R5WN32M	29,000	1.1417	29,500	1.1614	250	185	150	4,5	60	32	7	364.013
1246092	KSEM295R5WN32M	29,500	1.1614	30,000	1.1811	250	185	150	4,5	60	32	7	364.013
1246095	KSEM300R5WN32M	30,000	1.1811	30,000	1.1811	250	185	150	4,6	60	32	7	364.013
1246099	KSEM305R5WN32M	30,500	1.2008	31,000	1.2205	264	199	160	4,7	60	32	8	364.013
1246103	KSEM310R5WN32M	31,000	1.2205	31,500	1.2402	264	199	160	4,8	60	32	8	364.013
1246107	KSEM315R5WN32M	31,500	1.2402	32,000	1.2598	264	199	160	4,8	60	32	8	364.013
1246112	KSEM320R5WN32M	32,000	1.2598	32,000	1.2598	264	199	160	4,9	60	32	8	364.013

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.



- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.



for diameter <16mm DIN 6535 – HE
for diameter >16mm DIN 1835 part 1 form E



■ KSEM WN Shank • 7 x D • Metric

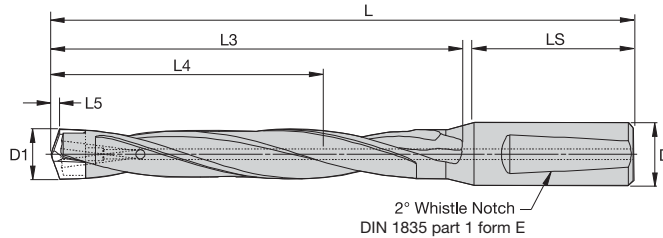


7 x D

order #	catalogue #	D1		D1 max		L	L3	L4 max	L5	LS	D	SSC	central lock screw
		mm	in	mm	in								
1797161	KSEM140R7WN16M	14,000	.5512	14,500	.5708	167	115	98	2,2	48	16	B	364.016
1797204	KSEM150R7WN20M	15,000	.5906	15,500	.6102	186	132	112	2,4	50	20	A	364.016
1311193	KSEM160R7WN20M	16,000	.6299	16,500	.6496	186	131	112	2,5	50	20	1	364.010
1279857	KSEM170R7WN20M	17,000	.6693	17,500	.6890	202	147	126	2,7	50	20	1	364.010
1279858	KSEM175R7WN20M	17,500	.6890	18,000	.7086	202	147	126	2,8	50	20	1	364.010
1279859	KSEM180R7WN20M	18,000	.7087	18,000	.7086	202	147	126	2,9	50	20	1	364.010
1279864	KSEM190R7WN25M	19,000	.7480	19,500	.7677	224	163	140	3,0	56	25	2	364.010
1279867	KSEM200R7WN25M	20,000	.7874	20,500	.8071	241	179	140	3,2	56	25	3	364.011
1279872	KSEM210R7WN25M	21,000	.8268	21,500	.8465	241	180	154	3,3	56	25	3	364.011
1279874	KSEM220R7WN25M	22,000	.8661	22,000	.8661	241	180	154	3,5	56	25	3	364.011

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.

- Use designated insert blade with each drill body.
- Drill shipped with central lock screw and wrench.



for diameter <16mm DIN 6535 – HE
for diameter >16mm DIN 1835 part 1 form E



■ KSEM WN Shank • 10 x D • Metric



10 x D

order #	catalogue #	D1		D1 max		L	L3	L4 max	L5	LS	D	SSC	central lock screw
		mm	in	mm	in								
1797210	KSEM140R10WN16M	14,000	.5512	14,500	.5708	210	158	140	2,2	48	16	B	364.016
1551609	KSEM160R10WN20M	16,000	.6299	16,500	.6496	234	179	160	2,5	50	20	1	364.010
1551833	KSEM175R10WN20M	17,500	.6890	18,000	.7086	251	196	175	2,8	50	20	1	364.010
1551834	KSEM180R10WN20M	18,000	.7087	18,000	.7086	256	201	180	2,9	50	20	1	364.010
1551836	KSEM190R10WN25M	19,000	.7480	19,500	.7677	274	213	190	3,0	56	25	2	364.010
1551838	KSEM200R10WN25M	20,000	.7874	20,500	.8071	297	236	200	3,2	56	25	3	364.011
1551840	KSEM220R10WN25M	22,000	.8661	22,000	.8661	307	246	220	3,5	56	25	3	364.011

SSC = Pocket Seat Reference. To correspond with the SSC on the inserts.



➤ KSEM PLUS™ Modular Drill System

Our KSEM PLUS drill concept is simple but effective. It combines the benefits of the KSEM™ modular drill (high feeds and length-to-diameter [L/D] ratios) with the benefits of an indexable drill (high speeds and low consumable costs). The KSEM PLUS system is a modular drilling platform, offering a pre-mountable HSS head with pocket seats for carbide inserts. The KSEM PLUS modular drill system features two head styles that are interchangeable on fitting tool bodies with our flexible FDS interface.

Primary Application

The KSEM PLUS system performs in steel, cast iron, stainless steel, and advanced materials. It is perfectly suited to exchange older HSS tools or low performance indexable drills for a very high performance drilling solution. The KSEM PLUS range comprises 28–70mm (1.102–4") from 3–10 x D. There is a wide range of applications in the energy market, and in general engineering (e.g., bearing rings for windmills, hydraulic manifolds, large engine parts, generator housings, etc.). This tool will deliver vast improvements in productivity, and greatly attribute to increasing your machining capacity.

Features and Benefits

Replaceable Heads with FDS-Interface Coupling

- Quickly and easily replace inserts or drill heads without removing tool bodies from the machine.
- Save money and reduce tool stock by replacing just the worn drill head.
- Use one tool body for different sizes and styles of drill head (a head fits any drill body of the same FDS size).

KSEM PLUS A1 Heads

- High metal removal rates.
- Very stable in normal cutting conditions.
- Cost-effective indexable Drill Fix™ DFT™ inserts.

KSEM PLUS B1 Heads

- High-speed drilling in difficult conditions.
- Drills stacked plates and cored holes.
- Capable of machining through cross holes.
- Works with slanted exits up to 15°.

Two Effective Cutting Edges

- The KSEM PLUS system has two full cutting edges in action when operating.
- Achieve up to 100% increased productivity versus an indexable drill of the same diameter.
- High L/D ratios possible from 1.5 x D up to 10 x D as stocked standards. Longer drills are possible as custom solutions.

KSEM PLUS™ A1 Heads
Economic, high-performance drilling.



KSEM PLUS B1 Heads
High-performance drilling in difficult conditions.



KSEM PLUS Pilot Insert

- Very high feed rates, comparable to modular drills.
- Very long tool life of KSEM PLUS centre inserts and modular heads due to better chip flow.
- No precentring necessary for drill depths up to 5 x D.

DFR™/DFT™/DFC™ Outboard Inserts

- Very high cutting speeds for high metal removal rates.
- Improved stability in all cutting conditions.
- Indexable inserts provide good surface finish and hole diameter accuracy.

Tailored Grades

Centre Inserts

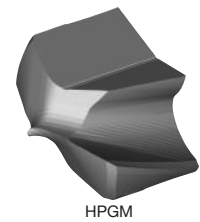
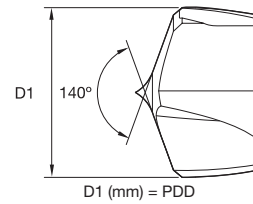
- KC7315™ grade — TiAlN-based PVD grade for superior performance in steel and stainless steel applications.

Drill Fix™ Lateral Inserts

- KCU25™ grade — high metal removal rates, advanced TiCN-Al-CVD coating, and superior tool life in stable working conditions.
- KCU40™ grade — multilayered TiAlN-PVD coating with high wear resistance and reliability in most materials at medium cutting speeds.
- KC7140™ grade — TiCN-based, PVD-coated alloyed carbide for machining alloyed steel and stainless steel on KSEM PLUS systems.



- To ensure 100% system stability, KSEM™ inserts used for KSEM PLUS should not be reground.
- The callout D1 (mm) = PDD. PDD is used in reference to the KSEM PLUS heads.



■ KSEM PLUS Centre Inserts

P	●
M	●
K	○
N	○
S	○
H	○

grade KC7315

D1

- first choice
- alternate choice

order #	catalogue #	mm	in	SSC
3660154	KSEMP1300HPGM	13,000	.5118	C
3690478	KSEMP1400HPGM	14,000	.5512	B
3690479	KSEMP1500HPGM	15,000	.5906	A
3690480	KSEMP1600HPGM	16,000	.6299	1
3690481	KSEMP1700HPGM	17,000	.6693	1
3690482	KSEMP1800HPGM	18,000	.7087	1
3690713	KSEMP1900HPGM	19,000	.7480	2
3660156	KSEMP2000HPGM	20,000	.7874	3
3690714	KSEMP2100HPGM	21,000	.8268	3
3690715	KSEMP2200HPGM	22,000	.8661	3
3690716	KSEMP2300HPGM	23,000	.9055	4
3690717	KSEMP2400HPGM	24,000	.9449	4
3690718	KSEMP2500HPGM	25,000	.9843	5
3690719	KSEMP2600HPGM	26,000	1.0236	5
3690720	KSEMP2700HPGM	27,000	1.0630	6
3690721	KSEMP2800HPGM	28,000	1.1024	6
3690722	KSEMP2900HPGM	29,000	1.1417	7
3690723	KSEMP3000HPGM	30,000	1.1811	7
3690724	KSEMP3100HPGM	31,000	1.2205	8
3690725	KSEMP3200HPGM	32,000	1.2598	8
3690726	KSEMP3300HPGM	33,000	1.2992	9
3660157	KSEMP3400HPGM	34,000	1.3386	9
5515220	KSEMP3500HPGM	35,000	1.3780	9
5515221	KSEMP3600HPGM	36,000	1.4173	9
5515222	KSEMP3700HPGM	37,000	1.4567	10
5515223	KSEMP3800HPGM	38,000	1.4961	10
5515224	KSEMP3900HPGM	39,000	1.5354	10
5515225	KSEMP4000HPGM	40,000	1.5748	10

SSC = Pocket Seat Reference. To correspond with the SSC on the toolholder.

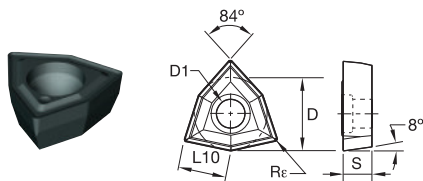
Tolerance HPG • Inch

D1	tolerance h8
.500–.709	+0.000/-0.010
>.709–1.181	+0.000/-0.013
>1.181–1.575	+0.000/-0.015

Tolerance HPG • Metric

D1	tolerance h8
12,5–18	+0,000/-0,027
>18–30	+0,000/-0,033
>30–40	+0,000/-0,039

- Use HP geometry for efficient drilling in normal chipping steel applications, as well as for ductile irons and high-temp alloys.



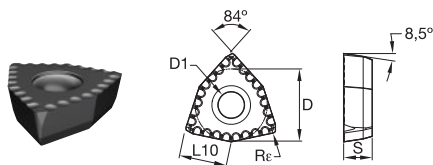
● first choice
○ alternate choice

P	●	●
M	○	○
K	●	○
N	○	○
S	○	●
H		

■ DFT-HP

catalogue number	L10	D	D1	S	Rε	KCU25	KCU40
DFT05T308D32HP	5,29	8,00	3,40	3,75	0,80	5067487	5066193
DFT05T308D33HP	5,29	8,00	3,40	3,75	0,80	5067488	5066195
DFT06T308D36HP	6,62	10,00	4,40	3,75	0,80	5067489	5066196
DFT06T308D39HP	6,62	10,00	4,40	3,75	0,80	5067520	5066197
DFT06T308D44HP	6,62	10,00	4,40	3,75	0,80	5067522	5066198
DFT070408D45HP	7,94	12,00	4,40	4,75	0,80	5067523	5066199
DFT070408D50HP	7,94	12,00	4,40	4,75	0,80	5067524	5066220
DFT090508D56HP	9,92	15,00	5,50	5,25	0,80	5067526	5066221
DFT090508D63HP	9,92	15,00	5,50	5,25	0,80	5067527	5066222

- Use DS geometry when drilling in long chipping, softer steels, or other applications where long chips are a challenge.
- DS will also provide excellent chip control when drilling with reduced feed rates and cutting speeds.



● first choice
○ alternate choice

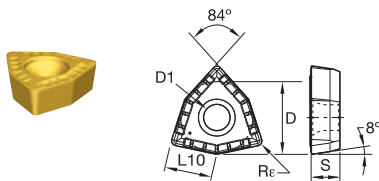
P	●	●
M	●	○
K		
N		○
S		○
H		

■ DFT • DS

catalogue number	L10	D	D1	S	Rε	KCU25	KCU40
DFT05T308D32DS	5,29	8,00	3,40	3,75	0,80	6573311	6025825
DFT05T308D33DS	5,29	8,00	3,40	3,75	0,80	6573312	6025826
DFT06T308D36DS	6,62	10,00	4,40	3,75	0,80	6573313	6025827
DFT06T308D39DS	6,62	10,00	4,40	3,75	0,80	6573314	6025828
DFT06T308D44DS	6,62	10,00	4,40	3,75	0,80	6573315	6025829
DFT070408D45DS	7,94	12,00	4,40	4,75	0,80	6573316	6025830
DFT070408D50DS	7,94	12,00	4,40	4,75	0,80	6573317	6025891
DFT090508D56DS	9,92	15,00	5,50	5,25	0,80	6573318	6025892
DFT090508D63DS	9,92	15,00	5,50	5,25	0,80	6573319	6025893



- Use MD geometry in stainless steel.
- MD is also recommended when drilling in unstable conditions on longer chipping materials when working at higher feed rates.



■ DFT-MD

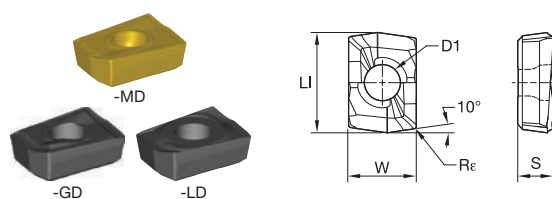
catalogue number	L10	D	D1	S	Re	KC7140
DFT05T308D32MD	5,29	8,00	3,40	3,75	0,80	3648430
DFT05T308D33MD	5,29	8,00	3,40	3,75	0,80	3669000
DFT06T308D36MD	6,62	10,00	4,40	3,75	0,80	3648428
DFT06T308D39MD	6,62	10,00	4,40	3,75	0,80	3669001
DFT06T308D44MD	6,62	10,00	4,40	3,75	0,80	3669002
DFT070408D45MD	7,94	12,00	4,40	4,75	0,80	3648474
DFT070408D50MD	7,94	12,00	4,40	4,75	0,80	3669083
DFT090508D56MD	9,92	15,00	5,50	5,25	0,80	3648478
DFT090508D63MD	9,92	15,00	5,50	5,25	0,80	3669084

P	●
M	●
K	○
N	○
S	○
H	

- first choice
- alternate choice

KSEM PLUS A1 Heads • Drill Fix™ DFR™ Inserts

- Rectangular shaped Drill Fix DFR cutting inserts offer the highest feed rates for smaller sized KSEM PLUS systems on A1 heads.
- Two indexable cutting edges.



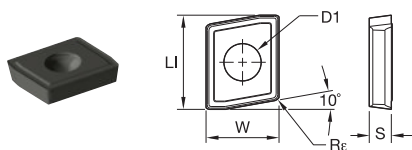
■ DFR-GD, -MD, -LD

catalogue number	LI	W	D1	S	Re	KC7140	KC7225	KCU25	KCU40
DFR040304D28LD	10,76	7,26	2,85	3,78	0,40	-	4054681	-	-
DFR040304D28GD	10,76	7,26	2,85	3,79	0,40	-	-	5067486	5066192
DFR040304D28MD	10,76	7,26	2,85	3,79	0,40	4054680	-	-	-

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

- first choice
- alternate choice

- Use HP geometry for efficient drilling in normal chipping steel applications, as well as for ductile irons and high-temp alloys.



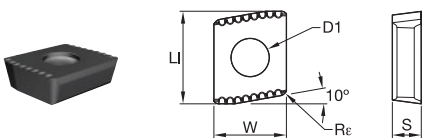
● first choice
○ alternate choice

P	●	●
M	○	○
K	●	○
N	○	●
S	○	●
H		

DFC-HP

catalogue number	LI	W	D1	S	Re	KCU25	KCU40
DFC040310D28HP	10,00	7,60	2,85	3,18	1,00	5118327	5118452
DFC05T312D32HP	12,00	9,40	3,40	3,75	1,20	5118328	5118453
DFC06T312D36HP	16,00	12,40	4,40	3,75	1,20	5118329	5118454
DFC070416D45HP	18,00	14,50	4,40	4,75	1,60	5118450	5118455
DFC090520D56HP	24,00	19,00	5,50	5,25	2,00	5118451	5118456

- Use DS geometry when drilling in long chipping, softer steels, or other applications where long chips are a challenge.
- DS will also provide excellent chip control when drilling with reduced feed rates and cutting speeds.



● first choice
○ alternate choice

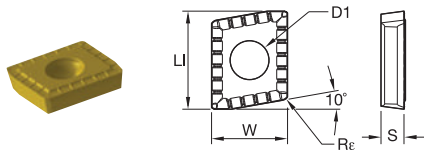
P	●	●
M	●	○
K		
N		○
S		○
H		

DFC-DS

catalogue number	LI	W	D1	S	Re	KCU25	KCU40
DFC040310D28DS	10,00	7,60	2,85	3,18	1,00	6573276	6025895
DFC05T312D32DS	12,00	9,40	3,40	3,75	1,20	6573277	6025896
DFC06T312D36DS	16,00	12,40	4,40	3,75	1,20	6573278	6025897
DFC070416D45DS	18,00	14,50	4,40	4,75	1,60	6573279	6025898
DFC090520D56DS	24,00	19,00	5,50	5,25	2,00	6573280	6025899



- Use MD geometry in stainless steel.
- MD is also recommended when drilling in unstable conditions on longer chipping materials when working at higher feed rates.



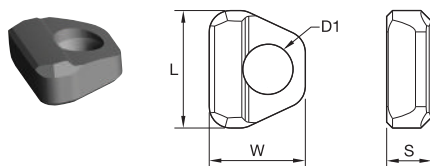
DFC-MD

- first choice
- alternate choice

P	●
M	●
K	○
N	○
S	○
H	

catalogue number	LI	W	D1	S	Re	KC7140
DFC040310D28MD	10,00	7,60	2,85	3,18	1,00	5118457
DFC05T312D32MD	12,00	9,40	3,40	3,75	1,20	5118458
DFC06T312D36MD	16,00	12,40	4,40	3,75	1,20	5118459
DFC070416D45MD	18,00	14,50	4,40	4,75	1,60	5118460
DFC090520D56MD	24,00	19,00	5,50	5,25	2,00	5118461

- Carbide guide pads for use with KSEM PLUS B1 style heads.



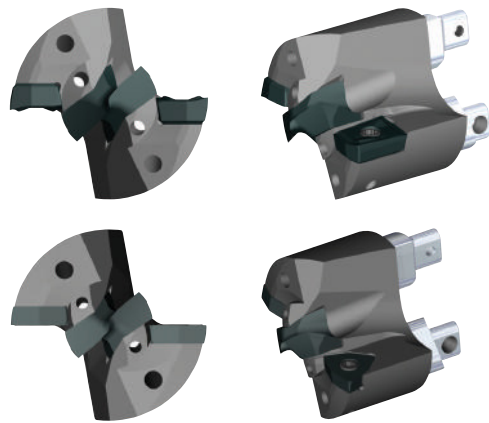
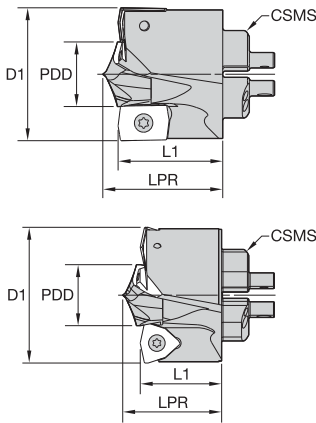
- first choice
- alternate choice

P	●
M	●
K	●
N	●
S	●
H	

DPA Guiding Pads

catalogue number	L	W	D1	S	KCU40
DPA07T3D25	8,60	7,00	2,85	3,50	5118324
DPA09T4D32	11,00	9,00	3,40	4,20	5118325
DPA13T5D50	16,00	13,00	4,40	5,20	5118326

- To ensure 100% system stability, KSEM inserts used for KSEM PLUS should not be reground.
- KSEM PLUS heads are shipped with all insert screws.
- KSEM PLUS heads are shipped with two wrenches, one for the KSEM insert and one to be used for the DFT™/DFR™ inserts as well as for the assembly of the body to the head.
- Order KSEM PLUS shanks using connection coupling size (CSMS) to determine which heads go with each shank.
- PDD in the callout drawing refers to the D1 of the KSEM HPG and HPCCL inserts for use with KSEM PLUS.
- Order inserts (KSEM, DFT, and DFR) for KSEM PLUS separately.



2 x DFR
diameter: 28–<31,75mm

2 x DFT
diameter: 31,75–70,34mm



■ KSEM PLUS A1 Heads

order number	ISO catalogue number	ANSI catalogue number	D1		PDD		LPR		L1		CSMS system size	outboard insert
			mm	in	mm	in	mm	in	mm	in		
4047824	KSEMP3000FDS28A1M	KSEMP3000FDS28A1M	30,00	1.181	16,00	.6299	25,2	.992	22,0	.866	FDS28	DFR040304D28GD
3794291	KSEMP3200FDS32A1M	KSEMP3200FDS32A1M	32,00	1.260	15,00	.5906	23,0	.907	20,0	.787	FDS32	DFT05T308D32..
3742210	KSEMP3300FDS32A1M	KSEMP3300FDS32A1M	33,00	1.299	16,00	.6299	23,2	.913	20,0	.787	FDS32	DFT05T308D33..
3793949	KSEMP3320FDS32A1M	KSEMP3320FDS32A1M	33,20	1.307	16,00	.6299	23,2	.913	20,0	.787	FDS32	DFT05T308D33..
3794917	KSEMP3334FDS32A1M	KSEMP1313FDS32A1	33,35	1.313	17,00	.6693	23,4	.920	20,0	.787	FDS32	DFT05T308D33..
3794292	KSEMP3400FDS32A1M	KSEMP3400FDS32A1M	34,00	1.339	17,00	.6693	23,4	.920	20,0	.787	FDS32	DFT05T308D33..
3794393	KSEMP3500FDS32A1M	KSEMP3500FDS32A1M	35,00	1.378	18,00	.7087	23,6	.928	20,0	.787	FDS32	DFT05T308D33..
3794394	KSEMP3600FDS36A1M	KSEMP3600FDS36A1M	36,00	1.417	13,00	.5118	22,7	.893	20,0	.787	FDS36	DFT06T308D36..
3794395	KSEMP3700FDS36A1M	KSEMP3700FDS36A1M	37,00	1.457	14,00	.5512	22,9	.900	20,0	.787	FDS36	DFT06T308D36..
3794427	KSEMP3750FDS36A1M	KSEMP3750FDS36A1M	37,50	1.476	15,00	.5906	23,0	.907	20,0	.787	FDS36	DFT06T308D36..
3794396	KSEMP3800FDS36A1M	KSEMP3800FDS36A1M	38,00	1.496	15,00	.5906	23,0	.907	20,0	.787	FDS36	DFT06T308D36..
3794397	KSEMP3900FDS36A1M	KSEMP3900FDS36A1M	39,00	1.535	16,00	.6299	23,2	.913	20,0	.787	FDS36	DFT06T308D39..
3793950	KSEMP3920FDS36A1M	KSEMP3920FDS36A1M	39,20	1.543	16,00	.6299	23,2	.913	20,0	.787	FDS36	DFT06T308D39..
3794921	KSEMP3970FDS36A1M	KSEMP1563FDS36A1	39,70	1.563	17,00	.6693	23,4	.920	20,0	.787	FDS36	DFT06T308D39..

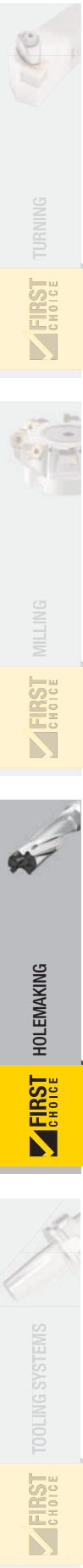
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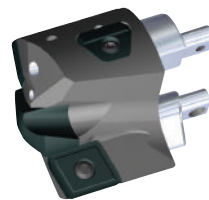
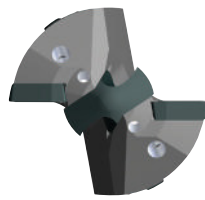
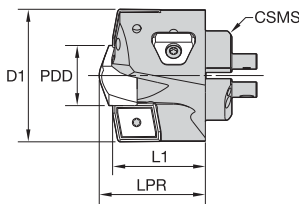
(KSEM PLUS A1 Heads – continued)

order number	ISO catalogue number	ANSI catalogue number	D1		PDD		LPR		L1		CSMS system size	outboard insert
			mm	in	mm	in	mm	in	mm	in		
3794398	KSEMP4000FDS40A1M	KSEMP4000FDS40A1M	40,00	1.575	17,00	.6693	28,6	1.125	25,0	.984	FDS40	DFT06T308D39..
3794399	KSEMP4100FDS40A1M	KSEMP4100FDS40A1M	41,00	1.614	18,00	.7087	28,8	1.132	25,0	.984	FDS40	DFT06T308D39..
3794400	KSEMP4200FDS40A1M	KSEMP4200FDS40A1M	42,00	1.654	19,00	.7480	28,9	1.139	25,0	.984	FDS40	DFT06T308D39..
3794401	KSEMP4300FDS40A1M	KSEMP4300FDS40A1M	43,00	1.693	20,00	.7874	29,1	1.146	25,0	.984	FDS40	DFT06T308D39..
3794402	KSEMP4400FDS40A1M	KSEMP4400FDS40A1M	44,00	1.732	21,00	.8268	29,3	1.153	25,0	.984	FDS40	DFT06T308D44..
3794403	KSEMP4500FDS45A1M	KSEMP4500FDS45A1M	45,00	1.772	18,00	.7087	28,8	1.132	25,0	.984	FDS45	DFT070408D45..
3794404	KSEMP4600FDS45A1M	KSEMP4600FDS45A1M	46,00	1.811	19,00	.7480	28,9	1.139	25,0	.984	FDS45	DFT070408D45..
3794406	KSEMP4800FDS45A1M	KSEMP4800FDS45A1M	48,00	1.890	21,00	.8268	29,3	1.153	25,0	.984	FDS45	DFT070408D45..
3742211	KSEMP5000FDS50A1M	KSEMP5000FDS50A1M	50,00	1.969	23,00	.9055	34,8	1.372	30,0	1.181	FDS50	DFT070408D50..
3794408	KSEMP5100FDS50A1M	KSEMP5100FDS50A1M	51,00	2.008	24,00	.9449	35,0	1.379	30,0	1.181	FDS50	DFT070408D50..
3794409	KSEMP5200FDS50A1M	KSEMP5200FDS50A1M	52,00	2.047	25,00	.9843	35,2	1.386	30,0	1.181	FDS50	DFT070408D50..
3794413	KSEMP5600FDS56A1M	KSEMP5600FDS56A1M	56,00	2.205	20,00	.7874	34,3	1.351	30,0	1.181	FDS56	DFT090508D56..
3794415	KSEMP5800FDS56A1M	KSEMP5800FDS56A1M	58,00	2.284	22,00	.8661	34,7	1.365	30,0	1.181	FDS56	DFT090508D56..
3794417	KSEMP6000FDS56A1M	KSEMP6000FDS56A1M	60,00	2.362	24,00	.9449	35,0	1.379	30,0	1.181	FDS56	DFT090508D56..
3794419	KSEMP6200FDS56A1M	KSEMP6200FDS56A1M	62,00	2.441	26,00	1.0236	35,4	1.392	30,0	1.181	FDS56	DFT090508D56..
3794421	KSEMP6400FDS63A1M	KSEMP6400FDS63A1M	64,00	2.520	28,00	1.1024	41,9	1.650	36,0	1.417	FDS63	DFT090508D63..
3794422	KSEMP6500FDS63A1M	KSEMP6500FDS63A1M	65,00	2.559	29,00	1.1417	42,1	1.657	36,0	1.417	FDS63	DFT090508D63..
3742212	KSEMP7000FDS63A1M	KSEMP7000FDS63A1M	70,00	2.756	34,00	1.3386	43,0	1.692	36,0	1.471	FDS63	DFT090508D63..

NOTE: Find the complete KSEM PLUS B1 product overview and assembly pages in the current Kennametal Master Catalogue.



- To ensure 100% system stability, KSEM inserts used for KSEM PLUS should not be reground.
- KSEM PLUS heads are shipped with all insert screws.
- KSEM PLUS B1 heads are shipped with two or three wrenches, one for the KSEM insert, one for DFC™ inserts and DPA guiding pads, as well as for assembling the head onto the tool body. One additional wrench might be added depending on the size of the guiding pad.
- Order KSEM PLUS shanks using connection coupling size (CSMS) to determine which heads go with each shank.
- PDD in the callout drawing refers to the D1 of the KSEM, HPGM, and HPCM inserts for use with KSEM PLUS.
- Order inserts (KSEM, DFC) for KSEM PLUS separately.



2 x DFC
diameter: 28-70,34mm

■ **KSEM PLUS B1 Heads**

order number	ISO catalogue number	ANSI catalogue number	D1		PDD		LPR		L1		CSMS system size	outboard insert
			mm	in	mm	in	mm	in	mm	in		
5115736	KSEMP2800FDS28B1M	KSEMP2800FDS28B1M	28,00	1.102	14,00	.5512	28,1	1.105	25,0	.984	FDS28	DFC040310D28
5116010	KSEMP3000FDS28B1M	KSEMP3000FDS28B1M	30,00	1.181	16,00	.6299	28,4	1.118	25,0	.984	FDS28	DFC040310D28
5116011	KSEMP3017FDS28B1M	KSEMP1188FDS28B1	30,18	1.188	17,00	.6693	28,6	1.125	25,0	.984	FDS28	DFC040310D28
5116013	KSEMP3100FDS28B1M	KSEMP3100FDS28B1M	31,00	1.220	17,00	.6693	28,6	1.125	25,0	.984	FDS28	DFC040310D28
5116015	KSEMP3200FDS32B1M	KSEMP3200FDS32B1M	32,00	1.260	15,00	.5906	28,2	1.111	25,0	.984	FDS32	DFC05T312D32
5116016	KSEMP3300FDS32B1M	KSEMP3300FDS32B1M	33,00	1.299	16,00	.6299	28,4	1.118	25,0	.984	FDS32	DFC05T312D32
5116019	KSEMP3400FDS32B1M	KSEMP3400FDS32B1M	34,00	1.339	17,00	.6693	28,6	1.125	25,0	.984	FDS32	DFC05T312D32
5116031	KSEMP3500FDS32B1M	KSEMP3500FDS32B1M	35,00	1.378	18,00	.7087	28,8	1.132	25,0	.984	FDS32	DFC05T312D32
5116032	KSEMP3600FDS36B1M	KSEMP3600FDS36B1M	36,00	1.417	13,00	.5118	27,9	1.098	25,0	.984	FDS36	DFC06T312D36
5116035	KSEMP3750FDS36B1M	KSEMP3750FDS36B1M	37,50	1.476	15,00	.5906	28,2	1.111	25,0	.984	FDS36	DFC06T312D36

(continued)

(KSEM PLUS B1 Heads – continued)

order number	ISO catalogue number	ANSI catalogue number	D1		PDD		LPR		L1		CSMS system size	outboard insert
			mm	in	mm	in	mm	in	mm	in		
5116036	KSEMP3800FDS36B1M	KSEMP3800FDS36B1M	38,00	1.496	15,00	.5906	28,2	1.111	25,0	.984	FDS36	DFC06T312D36
5116038	KSEMP3900FDS36B1M	KSEMP3900FDS36B1M	39,00	1.535	16,00	.6299	28,4	1.118	25,0	.984	FDS36	DFC06T312D36
5116041	KSEMP4000FDS40B1M	KSEMP4000FDS40B1M	40,00	1.575	17,00	.6693	33,8	1.330	30,0	1.181	FDS40	DFC06T312D36
5116044	KSEMP4200FDS40B1M	KSEMP4200FDS40B1M	42,00	1.654	19,00	.7480	34,1	1.344	30,0	1.181	FDS40	DFC06T312D36
5116045	KSEMP4300FDS40B1M	KSEMP4300FDS40B1M	43,00	1.693	20,00	.7874	34,3	1.351	30,0	1.181	FDS40	DFC06T312D36
5116046	KSEMP4400FDS40B1M	KSEMP4400FDS40B1M	44,00	1.732	21,00	.8268	34,5	1.358	30,0	1.181	FDS40	DFC06T312D36
5116098	KSEMP4500FDS45B1M	KSEMP4500FDS45B1M	45,00	1.772	18,00	.7087	34,0	1.337	30,0	1.181	FDS45	DFC070416D45
5116099	KSEMP4600FDS45B1M	KSEMP4600FDS45B1M	46,00	1.811	19,00	.7480	34,1	1.344	30,0	1.181	FDS45	DFC070416D45
5116112	KSEMP4800FDS45B1M	KSEMP4800FDS45B1M	48,00	1.890	21,00	.8268	34,5	1.358	30,0	1.181	FDS45	DFC070416D45
5116113	KSEMP4900FDS45B1M	KSEMP4900FDS45B1M	49,00	1.929	22,00	.8661	34,7	1.365	30,0	1.181	FDS45	DFC070416D45
5116114	KSEMP5000FDS50B1M	KSEMP5000FDS50B1M	50,00	1.969	23,00	.9055	40,0	1.577	35,0	1.378	FDS50	DFC070416D45
5116117	KSEMP5200FDS50B1M	KSEMP5200FDS50B1M	52,00	2.047	25,00	.9843	40,4	1.590	35,0	1.378	FDS50	DFC070416D45
5116122	KSEMP5600FDS56B1M	KSEMP5600FDS56B1M	56,00	2.205	20,00	.7874	39,5	1.556	35,0	1.378	FDS56	DFC090520D56
5116125	KSEMP5800FDS56B1M	KSEMP5800FDS56B1M	58,00	2.283	22,00	.8661	39,9	1.570	35,0	1.378	FDS56	DFC090520D56
5116127	KSEMP6000FDS56B1M	KSEMP6000FDS56B1M	60,00	2.362	24,00	.9449	40,2	1.584	35,0	1.378	FDS56	DFC090520D56
5116130	KSEMP6200FDS56B1M	KSEMP6200FDS56B1M	62,00	2.441	26,00	1.0236	40,6	1.597	35,0	1.378	FDS56	DFC090520D56

NOTE: When one screw is listed, it is for both insert and guiding pad. When two screws are listed, the first one is for the insert screw, and the second one is for the guiding pad. Find complete KSEM PLUS B1 product overview and assembly pages in current Kennametal Master Catalogue.

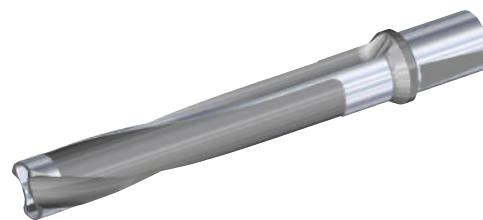
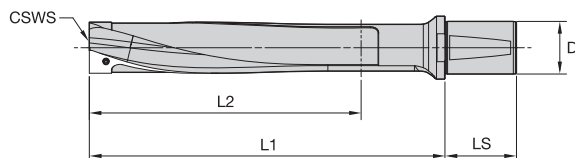
TURNING
FIRST CHOICE

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

- Order KSEM PLUS heads according to the connection coupling size (CSWS).
- Order KSEM PLUS heads separately.
- Wrench will be shipped with KSEM PLUS head.
- Custom solution for cast iron application with twisted flutes available.



■ KSEM PLUS WD Shanks • 3 x D • Metric



3 x D



order #	catalogue #	CSWS system size	D	L1	L2	LS	clamp screw
4000409	WD32FDS28128M	FDS28	32	128	71	58	193.537
3950219	WD32FDS32146M	FDS32	32	146	85	58	193.523
3950220	WD32FDS36166M	FDS36	32	166	97	58	193.524
3872075	WD50FDS40183M	FDS40	50	183	107	68	193.524
3872079	WD50FDS45206M	FDS45	50	206	122	68	193.525
3950221	WD50FDS50228M	FDS50	50	228	135	68	193.525
3950222	WD50FDS56259M	FDS56	50	259	156	68	193.526
3950333	WD50FDS63289M	FDS63	50	289	174	68	193.526



■ KSEM PLUS WD Shanks • 5 x D • Metric



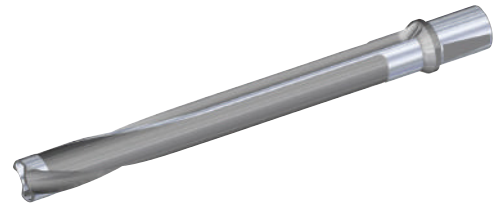
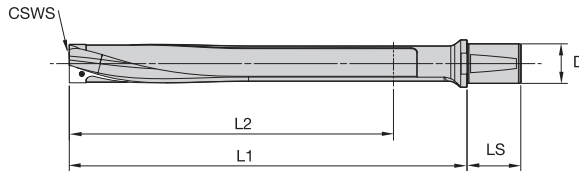
5 x D



order #	catalogue #	CSWS system size	D	L1	L2	LS	clamp screw
4051136	WD32FDS28190M	FDS28	32	190	133	58	193.537
3794428	WD32FDS32216M	FDS32	32	216	155	58	193.523
3794430	WD32FDS36244M	FDS36	32	244	175	58	193.524
3794443	WD50FDS40271M	FDS40	50	271	195	68	193.524
3794446	WD50FDS45304M	FDS45	50	304	220	68	193.525
3794449	WD50FDS50338M	FDS50	50	338	245	68	193.525
3794451	WD50FDS56383M	FDS56	50	383	280	68	193.526
3794454	WD50FDS63429M	FDS63	50	429	314	68	193.526



- Order KSEM PLUS heads according to the connection coupling size (CSWS).
- Order KSEM PLUS heads separately.
- Wrench will be shipped with KSEM PLUS head.
- Custom solution for cast iron application with twisted flutes available.



■ KSEM PLUS WD Shanks • 8 x D • Metric



8 x D



order #	catalogue #	CSWS system size	D	L1	L2	LS	clamp screw
3742293	WD32FDS32321M	FDS32	32	321	260	58	193.523
3794431	WD32FDS36361M	FDS36	32	361	292	58	193.524
3794444	WD50FDS40403M	FDS40	50	403	327	68	193.524
3794447	WD50FDS45451M	FDS45	50	451	367	68	193.525
3742294	WD50FDS50503M	FDS50	50	503	410	68	193.525
3794452	WD50FDS56569M	FDS56	50	569	466	68	193.526

■ KSEM PLUS WD Shanks • 10 x D • Metric



10 x D



order #	catalogue #	CSWS system size	D	L1	L2	LS	clamp screw
3794429	WD32FDS32391M	FDS32	32	391	330	58	193.523
3794432	WD32FDS36439M	FDS36	32	439	370	58	193.524
3794445	WD50FDS40491M	FDS40	50	491	415	68	193.524

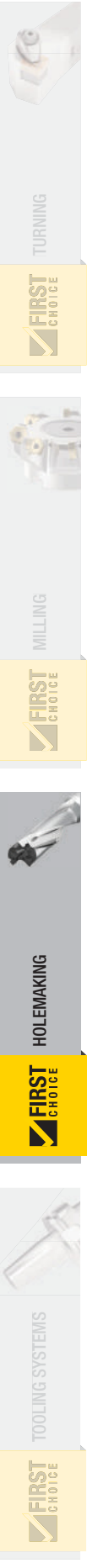
■ KSEM PLUS Carbide Insert Recommendations

Material Group	Outboard/ Inboard	Insert Style	Grade	Comments
P	O	DFR-GD	KCU25, KCU40	Recommended outboard insert style for working in all P-materials. Start with KCU40™ and use KCU25™ in stable conditions to achieve higher tool life.
		DFC-/DFT-HP		
	I	DFC-/DFT-DS	KCU40	Reduce feed rate by 10% to further improve chip formation in long-chipping steels and low carbon steel.
M	O	DFR-MD	KC7140	Recommended outboard insert style for working in all M-materials.
		DFC-/DFT-MD		
		DFC-/DFT-DS	KCU40	
	I	KSEMP-HPG	KC7315	Recommended inboard insert style for working in all M-materials.
		KSEM-PC	KC7315	For unstable conditions in stainless steel, use KSEM PC inserts.
	KSEM-HPL	KC7320	If chip control issue resulting from center insert occurs in M-materials, use KSEM HPL insert inboard. Reduction of feed rate up to 20% is recommended.	
K	O	DFR-LD	KCU25	Recommended insert styles for working in all K-Materials.
		DFC-/DFT-HP		
	I	KSEM-HPCCL	KC7140	
N	O	DFR-GD	KC7225	Recommended outboard insert styles for working in all non-ferrous materials.
		DFC-/DFT-HP	KCU40	
		DFC-/DFT-DS	KCU40	Reduce feed rate by 15% for diameters <56mm and up to 50% for larger diameters to improve chip formation.
		DFR/DFT-ST	KD1425	Use PCD tipped outboard when working with CFRP, CFRP/metal stacks and plastics (N3, N5, and N6).
	I	KSEMP-HPG	KC7315	Recommended inboard insert style for working in all non-ferrous materials.
KSEM-HPS		K715	This is a made-to-order item (uncoated/sharp) – use it to improve your results in N3, N5, and N6, if required.	
S	O	DFR-GD	KC7140	Recommended outboard insert style for working in all S-materials.
		DFC-/DFT-HP	KCU40	
		DFC-/DFT-DS	KCU40	Reduce feed rate by 20% to further improve chip formation and/or run with lower power consumption.
	I	KSEM-PC	KC7315	If center breakage is an issue in S-materials, use KSEM PC insert inboard.



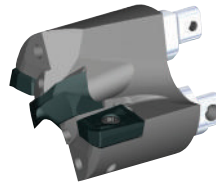
■ Modular Drill • KSEM PLUS™ • Metric • A1 and B1 Style

		Metric									
Material Group	Condition	Cutting Speed – vc Range – m/min			Recommended Feed Rate (fz) by Diameter						
		min	Starting Value	max	Ø	KSEM 14....17 DFR/DFC04... 28,00-31,74	KSEM 15....18 DFT/DFC05... 31,74-35,99	KSEM 13....22 DFT/DFC06... 36,00-44,99	KSEM 18....28 DFT/DFC07... 45,00-55,99	KSEM 20....34 DFT/DFC09... 56,00-70	
P	1	S	115	235	290	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	90	160	215	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	65	100	140	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	2	S	90	190	230	mm/r	0,160-0,280	0,160-0,280	0,200-0,360	0,200-0,400	0,200-0,450
		U	71	130	170	mm/r	0,160-0,280	0,160-0,280	0,200-0,360	0,200-0,400	0,200-0,450
		I	50	80	110	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
	3	S	90	180	230	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
		U	70	120	170	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
		I	50	70	106	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
	4	S	90	140	220	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
		U	70	110	160	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
		I	50	80	110	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450
5	S	90	130	210	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
	U	70	100	150	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
	I	50	70	100	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
6	S	70	90	180	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
	U	50	75	120	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
	I	40	60	100	mm/r	0,160-0,280	0,160-0,280	0,200-0,320	0,200-0,400	0,200-0,450	
M	1	S	60	110	135	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	40	70	90	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	30	50	65	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	2	S	60	100	135	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	40	60	90	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	30	50	65	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	3	S	50	90	135	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	40	60	90	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	25	40	65	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
K	1	S	90	170	230	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		U	60	120	160	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		I	40	70	90	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
	2	S	90	160	220	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		U	60	110	160	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		I	40	70	100	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
	3	S	90	150	210	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		U	60	100	150	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
		I	35	60	90	mm/r	0,180-0,300	0,180-0,300	0,216-0,360	0,240-0,420	0,300-0,480
N	1	S	150	240	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	160	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	100	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
	2	S	150	220	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	150	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	100	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
	3	S	150	200	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	140	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	90	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
	4	S	150	200	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	140	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	90	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
	5	S	150	200	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	140	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	90	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
	6	S	150	200	360	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		U	100	140	240	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
		I	60	90	160	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400
7	S	110	220	260	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400	
	U	70	140	170	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400	
	I	45	90	110	mm/r	0,120-0,200	0,120-0,200	0,144-0,280	0,160-0,320	0,200-0,400	
S	1	S	25	50	75	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	20	40	60	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	15	30	50	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	2	S	20	40	60	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	15	30	45	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	12	25	35	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	3	S	20	40	60	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	15	30	45	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	12	25	40	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
	4	S	20	40	60	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		U	15	30	45	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360
		I	12	25	40	mm/r	0,130-0,250	0,130-0,250	0,160-0,280	0,160-0,320	0,200-0,360

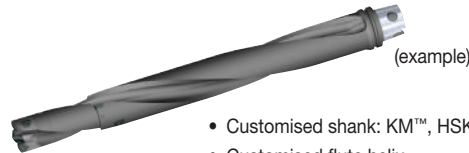




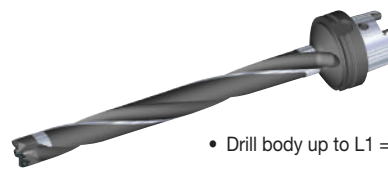
Application	Workpiece Shape	A1 Head	B1 Head
Flat Face		✓	✓
Cored Hole		✗	✓
Stacked Plates		✗	✓
Angled Exit (exit only!)		✓ <math><3^\circ</math>	✓ max 15°
Angled Entrance		✓ <math><3^\circ</math>	✓ <math><3^\circ</math>
Cross Holes		✗	✓ max 50% of D1

KSEM PLUS Customised Solution Capabilities:


- Intermediate head \varnothing .
- Custom head to use reground KSEM inserts.
- Heads for cross holes $\varnothing = d1$.



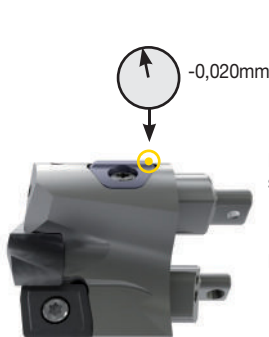
- Customised shank: KM™, HSK, VDI, ISO taper, etc.
- Customised flute helix.
- Step drill.



- Drill body up to $L1 = 20 \times D$ and total length of 1250mm.

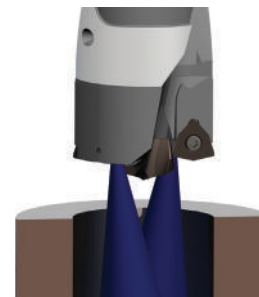
Mounting DPA Guiding Pads on B1 Heads

All B1 heads are delivered with preset guiding pads.

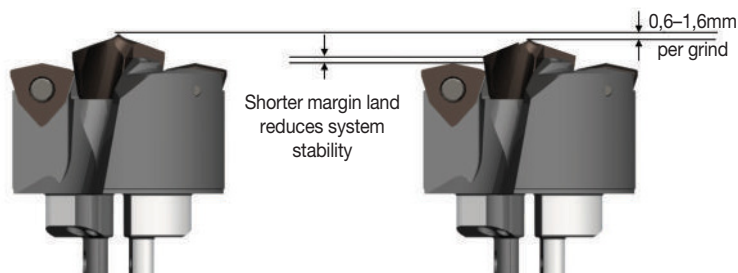


Measure radial undersize "A" of pad to cutting edge for both sides and adjust using shim set that comes with each head.

NOTE: For best results with slanted exits and in cross hole drilling, we recommend guiding pads adjustment results in an undersize of $A = 30 \mu\text{m}$ (edge of guiding pads to cutting edges).

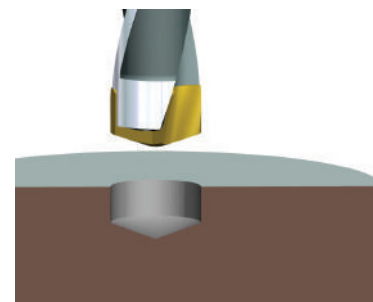
Coolant Recommendations


Internal coolant is recommended for optimum chip flow and tool life.

KSEM PLUS Piloting Insert SHOULD NOT Be Reground:


Only new KSEM PLUS inserts will provide consistency and process security on a KSEM PLUS modular drill system. If you want to regrind, refer to our custom solution A1 and B1 heads.

NOTE: Reground KSEM PLUS inserts can be used in KSEM drills.

Piloting Instructions:


1. KSEM...PC Pilot drill \varnothing equal KSEMP \varnothing PDD
2. Drill 1mm deep from full diameter





	Drill/Insert/Body Series	grade	standard						hole tolerance	First Choice Range			
			● first choice ○ alternate choice							diameter range		drilling depth L/D1	
			P	M	K	N	S	H		D1 mm	D1 inch		
										min-max	min-max		
Indexable Drills — Lowest cost per hole in short holes and larger diameters													
DFR™ Indexable Drill — Soft cutting and improved tool life for the smaller diameter range													
	DFR™ Indexable Drill Body	WD (metric)							IT9-IT11	12,5-25,0	.4921-.9450	2 x D 3 x D	
	DFR™ Inserts	DFR LD	KC7140	●	●	○	○	○		12,5-25,4	.4921-1.0000	—	
		DFR GD	KCU25	●	○	●	○	○					
		DFR GD	KCU40	●	○	○	○	●					○
		DFR MD		●	●	○	○	○					○
	DFR LD			○	●	●	●	○					
DFSP™ Indexable Drill — Most economical using square inserts for a wide range of diameters													
	DFSP Indexable Drill Body	WD (metric)							IT9-IT11		.7100-2.1650	2 x D 3 x D	
	DFSP Outboard Inserts	SP X (R)HP	KC7140	●	●	○	○	○		14,0-56,0	.5630-2.1650	—	
		SP X MD		●	●	○	○	○					
		SP X (R)HP	KCU40	●	●	○	○	●					
		SP X MD		●	●	○	○	●					
		SP X FP		●	●	○	○	●					
		SP X LP		●	○	○	○	○					
SP X (R) HP	KCU25	●	○	●	○	○							
SP X MD		●	○	●	○	○							
SP X FP		●	○	●	○	○							
	DFT Inboard Inserts for DFSP	DFT HP	KC7140	●	●	○	○	○		18,0-56,0	.7100-2.1650	—	
		DFT MD		●	●	○	○	○					
		DFT DS	KCU40	●	○	○	○	○					
		DFT HP		KMF			●	○	○				

*Not all intermediate sizes available in First Choice.



➤ Drill Fix™ DFR™

The Drill Fix DFR platform offers maximum feed rates at a diameter range of 12,5–24mm (.500–1.000") for 2 x D and 3 x D applications. Using rectangular-shaped inboard and outboard inserts enables soft starting cuts, short chips, and higher feed rates compared to small-size symmetrical-trigon or square inserts. The Drill Fix DFR platform's low cutting forces provide long tool life and high stability at the smallest diameters.

Features and Benefits

Productivity and Profitability

- Achieve high feed rates with rectangular-shaped inserts that offer a soft starting cut and greater stability.
- Use X-offset on turning machines to adjust drill, and eliminate the need for specials in many applications, and on machining centres to reach tolerance optimisation.
- Same insert size is used in each pocket, reducing inventory costs.

Versatility

- Diameter range covering 12,5–24mm (.500–1.000").
- 2 x D and 3 x D ratios as standard.
- Multiple insert grades and geometries available.
- Use where feed rates are the limiting factor.
- Apply in straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Eccentric chuck available as standard.

Low cutting forces provide long tool body life and high stability at the smallest diameters.

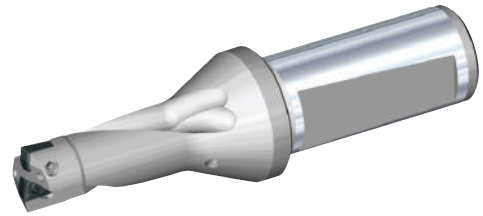
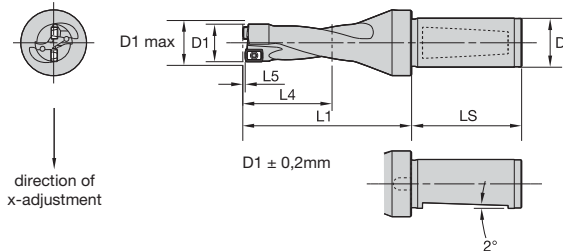
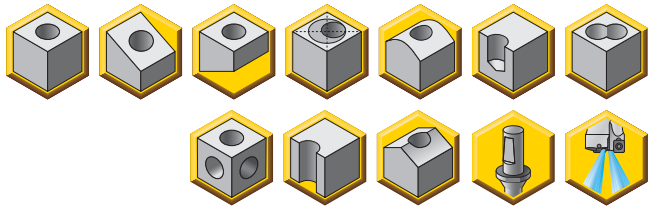


Reliability

- High stability in smaller sizes due to rectangular-shaped insert.
- Same insert can be used as inboard or outboard insert. No risk of mixing up inner and outer inserts.
- Low cutting forces result in long body tool life.



- Drill shipped with insert screws and Torx wrench.



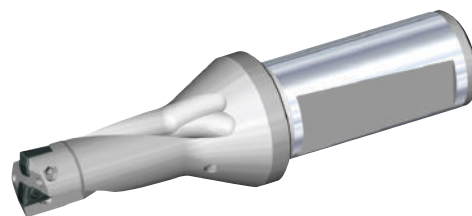
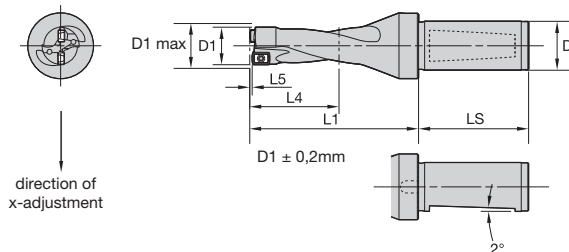
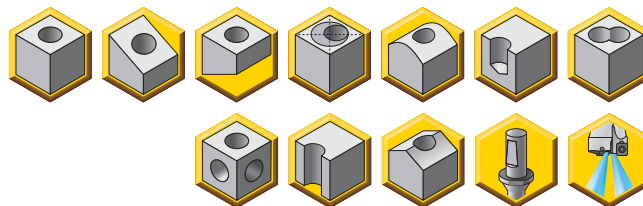
■ **WD Shank • 2 x D • Metric**

D 20								gage insert
order #	catalogue #	D1	D1 max	L1	L4 max	L5	LS	
1608363	DFR125R2WD20M	12,50	13,50	47,4	25,0	0,5	45	DFR0202..
1608364	DFR127R2WD20M	12,70	13,70	47,8	25,4	0,5	45	DFR0202..
1608365	DFR130R2WD20M	13,00	14,00	48,4	26,0	0,5	45	DFR0202..
1608366	DFR135R2WD20M	13,50	14,50	49,4	27,0	0,5	45	DFR0202..
1608367	DFR140R2WD20M	14,00	15,00	50,4	28,0	0,5	45	DFR0202..
1608368	DFR145R2WD20M	14,50	15,50	53,4	29,0	0,5	45	DFR0202..
1608369	DFR150R2WD20M	15,00	16,00	54,4	30,0	0,5	45	DFR0202..
1608370	DFR155R2WD20M	15,50	16,50	55,4	31,0	0,5	45	DFR0202..
1608391	DFR160R2WD20M	16,00	17,00	56,4	32,0	0,5	45	DFR0202..

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	193.281	170.027	6
DFR0302..	192.416	170.023	7
DFR0403..	192.432	170.028	8

- Drill shipped with insert screws and Torx wrench.



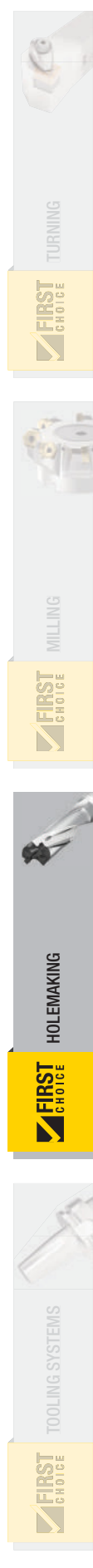
■ WD Shank • 2 x D • Metric

D 32		D1	D1 max	L1	L4 max	L5	LS	gage insert
1754251	DFR165R2WD32M	16,50	17,50	62,4	33,0	0,6	58	DFR0302..
1810334	DFR170R2WD32M	17,00	18,00	63,4	34,0	0,6	58	DFR0302..
1810335	DFR175R2WD32M	17,50	18,50	64,4	35,0	0,6	58	DFR0302..
1810336	DFR180R2WD32M	18,00	19,00	65,4	36,0	0,6	58	DFR0302..
1810337	DFR185R2WD32M	18,50	19,50	66,4	37,0	0,6	58	DFR0302..
1799693	DFR190R2WD32M	19,00	20,00	67,4	38,0	0,6	58	DFR0302..
1810338	DFR195R2WD32M	19,50	20,50	68,4	39,0	0,6	58	DFR0302..
1810339	DFR200R2WD32M	20,00	21,00	72,4	40,0	0,6	58	DFR0302..
1810340	DFR205R2WD32M	20,50	21,50	73,6	41,0	0,8	58	DFR0403..
1810341	DFR210R2WD32M	21,00	22,00	74,6	42,0	0,8	58	DFR0403..
1810342	DFR220R2WD32M	22,00	23,00	76,6	44,0	0,8	58	DFR0403..
1810363	DFR230R2WD32M	23,00	24,00	78,6	46,0	0,8	58	DFR0403..
1810364	DFR240R2WD32M	24,00	25,00	80,6	48,0	0,8	58	DFR0403..

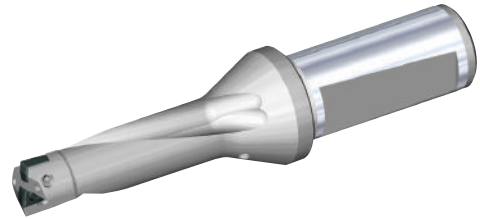
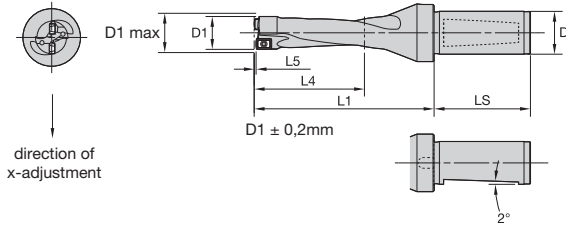
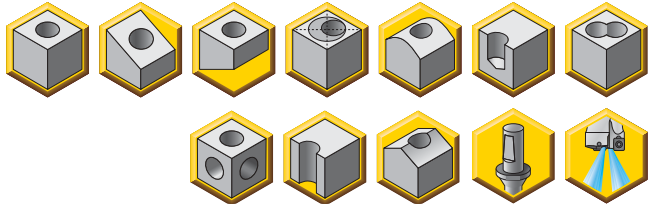
WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	193.281	170.027	6
DFR0302..	192.416	170.023	7
DFR0403..	192.432	170.028	8



- Drill shipped with insert screws and Torx wrench.



WD Shank • 3 x D • Metric

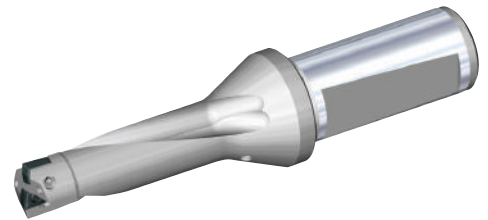
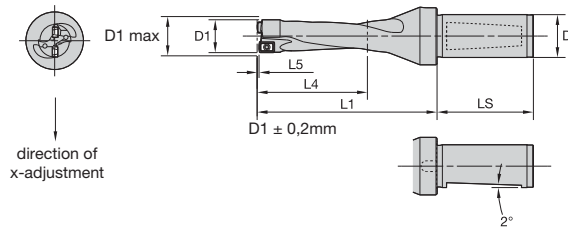
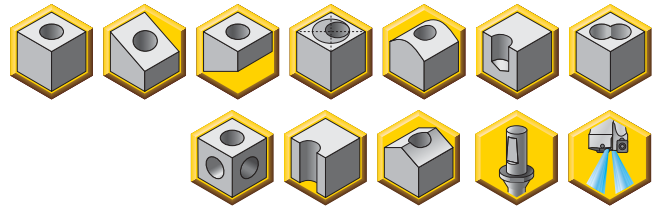
D 20		D1	D1 max	L1	L4 max	L5	LS	gage insert
1608392	DFR125R3WD20M	12,50	13,50	59,9	37,5	0,5	45	DFR0202..
1608393	DFR127R3WD20M	12,70	13,70	60,5	38,1	0,5	45	DFR0202..
1608394	DFR130R3WD20M	13,00	14,00	61,4	39,0	0,5	45	DFR0202..
1608395	DFR135R3WD20M	13,50	14,50	62,9	40,5	0,5	45	DFR0202..
1608396	DFR140R3WD20M	14,00	15,00	64,4	42,0	0,5	45	DFR0202..
1608397	DFR145R3WD20M	14,50	15,50	67,9	43,5	0,5	45	DFR0202..
1608398	DFR150R3WD20M	15,00	16,00	69,4	45,0	0,5	45	DFR0202..
1608399	DFR155R3WD20M	15,50	16,50	70,9	46,5	0,5	45	DFR0202..
1608400	DFR160R3WD20M	16,00	17,00	72,4	48,0	0,5	45	DFR0202..

WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

gage insert	insert screw	Torx wrench	Torx size
DFR0202..	193.281	170.027	6
DFR0302..	192.416	170.023	7
DFR0403..	192.432	170.028	8

- Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 3 x D • Metric**

D 25		D1	D1 max	L1	L4 max	L5	LS	gage insert
2498749	DFR175R3WD25M	17,50	18,50	81,9	52,5	0,6	45	DFR0302..
2498750	DFR180R3WD25M	18,00	19,00	83,4	54,0	0,6	45	DFR0302..
2498751	DFR185R3WD25M	18,50	19,50	84,9	55,5	0,6	45	DFR0302..
2498752	DFR190R3WD25M	19,00	20,00	86,4	57,0	0,6	45	DFR0302..
2499003	DFR195R3WD25M	19,50	20,50	87,9	58,5	0,6	45	DFR0302..
2499004	DFR200R3WD25M	20,00	21,00	92,4	60,0	0,6	45	DFR0302..
2499005	DFR205R3WD25M	20,50	21,50	94,1	61,5	0,8	45	DFR0403..
1799056	DFR210R3WD25M	21,00	22,00	95,6	63,0	0,8	45	DFR0403..
1799059	DFR220R3WD25M	22,00	23,00	98,6	66,0	0,8	45	DFR0403..
2499006	DFR230R3WD25M	23,00	24,00	101,6	69,0	0,8	45	DFR0403..
2499007	DFR240R3WD25M	24,00	25,00	104,6	72,0	0,8	45	DFR0403..

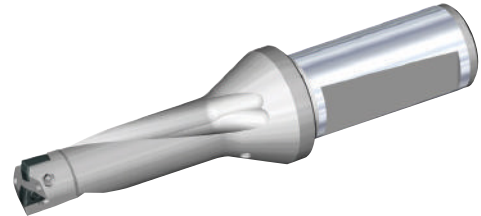
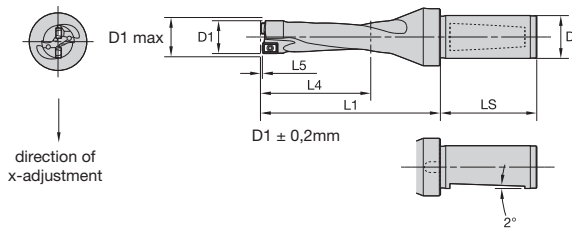
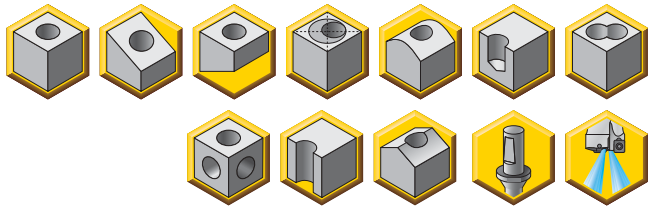
WARNING

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gage insert	insert screw	Torx wrench	Torx size
DFR0202..	193.281	170.027	6
DFR0302..	192.416	170.023	7
DFR0403..	192.432	170.028	8



• Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 3 x D • Metric**

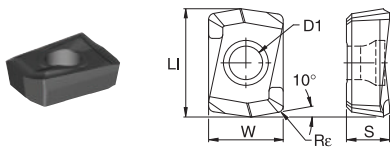
D 32								gage insert
order #	catalogue #	D1	D1 max	L1	L4 max	L5	LS	
1810365	DFR165R3WD32M	16,50	17,50	78,9	49,5	0,6	58	DFR0302..
1798962	DFR170R3WD32M	17,00	18,00	80,4	51,0	0,6	58	DFR0302..
1810366	DFR175R3WD32M	17,50	18,50	81,9	52,5	0,6	58	DFR0302..
1799053	DFR180R3WD32M	18,00	19,00	83,4	54,0	0,6	58	DFR0302..
1810367	DFR185R3WD32M	18,50	19,50	84,9	55,5	0,6	58	DFR0302..
1810368	DFR190R3WD32M	19,00	20,00	86,4	57,0	0,6	58	DFR0302..
1810369	DFR195R3WD32M	19,50	20,50	87,9	58,5	0,6	58	DFR0302..
1799055	DFR200R3WD32M	20,00	21,00	92,4	60,0	0,6	58	DFR0302..
1810370	DFR205R3WD32M	20,50	21,50	94,1	61,5	0,8	58	DFR0403..
1810371	DFR210R3WD32M	21,00	22,00	95,6	63,0	0,8	58	DFR0403..
1799695	DFR220R3WD32M	22,00	23,00	98,6	66,0	0,8	58	DFR0403..
1810372	DFR230R3WD32M	23,00	24,00	101,6	69,0	0,8	58	DFR0403..
1810373	DFR240R3WD32M	24,00	25,00	104,6	72,0	0,8	58	DFR0403..

WARNING

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gage insert	insert screw	Torx wrench	Torx size
DFR0202..	193.281	170.027	6
DFR0302..	192.416	170.023	7
DFR0403..	192.432	170.028	8

- General purpose chipbreaker geometry preferred on ductile and normal chipping materials.
- Preferred on outboard position.



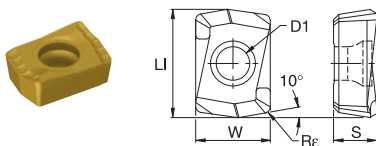
● first choice
○ alternate choice

P	●	●
M	○	○
K	●	○
N		○
S		●
H		○

DFR-GD

catalogue number	LI	W	D1	S	Rε	KCU25	KCU40
DFR020204GD	7,12	4,90	2,30	2,79	0,40	5066798	5065554
DFR030204GD	8,71	6,00	2,50	2,88	0,40	5067312	5065558
DFR040304GD	10,76	7,38	2,85	3,79	0,40	5067314	5065661

- Positive chipbreaker geometry preferred for unstable cutting on longer chipping materials at high feed rates.



● first choice
○ alternate choice

P	●	●
M	●	●
K	○	○
N	○	○
S	●	●
H		

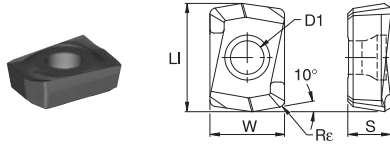
DFR-MD

catalogue number	LI	W	D1	S	Rε	KCU40
DFR020204MD	7,12	4,90	2,30	2,79	0,40	5065556
DFR030204MD	8,71	6,00	2,50	2,88	0,40	5065559
DFR040304MD	10,76	7,38	2,85	3,79	0,40	5065662



TURNING
FIRST CHOICE

- High positive chipbreaker geometry preferred on ductile and normal chipping materials at medium feed rates.
- Preferred on inboard position.



- first choice
- alternate choice

P	○	●
M	●	●
K	●	○
N	●	○
S	●	○
H	○	

DFR-LD

MILLING
FIRST CHOICE

catalogue number	LI	W	D1	S	Re	KCU40	KC7140
DFR020204LD	7,12	4,90	2,30	2,79	0,40	5065552	1730321
DFR030204LD	8,71	6,00	2,50	2,86	0,40	5065557	5533632
DFR040304LD	10,76	7,38	2,85	3,76	0,40	5065660	5533633

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

Drill Fix™ DFR™ • Metric

Material Group	Condition	Pocket Seat	Geometry	Grade	Metric							
					Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter				
					Range – m/min			Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm	
min	Starting Value	max										
P	1	S	O	MD	KCU25	310	325	360	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	MD	KC7140							
		U	O	MD	KCU40	200	215	230	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	MD	KC7140							
		I	O	MD	KC7140	130	135	150	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	MD	KC7140							
	2	S	O	GD	KCPK10	310	325	360	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		U	O	GD	KCU40	200	215	230	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		I	O	MD	KC7140	130	135	150	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
	3	S	O	GD	KCPK10	260	285	320	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		U	O	GD	KCU40	180	195	220	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		I	O	GD	KC7140	110	120	140	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
	4	S	O	GD	KCU25	220	250	300	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		U	O	GD	KCU40	150	180	220	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
		I	O	GD	KC7140	90	110	140	mm/r	0,09–0,15	0,11–0,18	0,15–0,25
			I	LD	KC7140							
5	S	O	GD	KCU25	180	200	220	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
	U	O	GD	KCU40	120	135	150	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
	I	O	GD	KC7140	70	85	100	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
6	S	O	GD	KCU25	180	200	220	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
	U	O	GD	KCU40	120	135	150	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
	I	O	GD	KC7140	70	85	100	mm/r	0,07–0,13	0,09–0,15	0,11–0,18	
		I	LD	KC7140								
M	1	S	O	MD	KC7140	150	190	230	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		U	O	MD	KC7140	100	130	160	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		I	O	MD	KC7140	60	80	100	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
	2	S	O	MD	KC7140	150	180	210	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		U	O	MD	KC7140	100	130	160	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		I	O	MD	KC7140	60	80	100	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
	3	S	O	MD	KC7140	100	130	160	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		U	O	MD	KC7140	80	110	140	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							
		I	O	MD	KC7140	50	70	90	mm/r	0,07–0,13	0,08–0,16	0,10–0,18
			I	MD	KC7140							

Condition: S = Stable cutting conditions;
 U = Unstable cutting conditions;
 I = Interrupted cutting conditions

Pocket seat: I = Inboard insert;
 O = Outboard insert

All geometry/grade combinations are not part of our First Choice offering. Please refer to the current Kennametal Master Catalogue for the complete offering.



Drill Fix™ DFR™ • Metric

		Metric										
Material Group	Condition	Pocket Seat	Geometry	Grade	Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter				
					Range – m/min			Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm	
					min	Starting Value	max					
K	1	S	O	GD	KCPK10	200	240	300	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
			I	LD	KCU40							
		U	O	GD	KCU25	120	155	200	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
	I		LD	KC7140								
	2	S	O	GD	KCPK10	180	220	260	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
				LD	KCU40							
		U	O	GD	KCU25	110	140	170	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
	I		LD	KC7140								
	3	S	O	GD	KCPK10	180	220	260	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
				LD	KCU40							
		U	O	GD	KCU25	110	140	170	mm/r	0,10–0,18	0,12–0,20	0,14–0,24
	I		LD	KC7140								
N	1	S	O	ST	KD1425	400	600	800	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
			I	ST	KD1425							
		U	O	LD	KCU40	300	400	500	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
	I		LD	KCU40								
	2	S	O	ST	KD1425	375	550	775	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
				LD	KCU40							
		U	O	LD	KCU40	250	350	450	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
	I		LD	KCU40								
	3	S	O	ST	KD1425	350	500	650	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
				I	ST							
		U	O	LD	KCU40	250	350	450	mm/r	0,07–0,09	0,10–0,14	0,12–0,16
	I		LD	KCU40								
4	S	O	ST	KD1425	400	600	800	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
			I	ST								KD1425
	U	O	LD	KCU40	250	350	450	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
I		LD	KCU40									
5	S	O	ST	KD1425	400	600	800	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
			I	ST								KD1425
	U	O	LD	KCU40	250	350	450	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
I		LD	KCU40									
6	S	O	ST	KD1425	400	600	800	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
			I	ST								KD1425
	U	O	GD	KCU40	250	350	450	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
I		GD	KCU40									
	I	O	GD	KMF	200	300	400	mm/r	0,07–0,09	0,10–0,14	0,12–0,16	
			I	GD								KMF

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■ Drill Fix™ DFR™ • Metric

Metric												
Material Group	Condition	Pocket Seat	Geometry	Grade	Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter				
					Range – m/min			Ø	DFR02... 12,50–16,00mm	DFR03... 16,50–20,00mm	DFR04... 20,50–24,00mm	
					min	Starting Value	max					
S	S	O	GD	KCU40	60	70	75	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	
		I	LD	KCU40								
	U	O	GD	KCU40	40	50	60	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	
		I	LD	KC7140								
	I	O	MD	KC7140	25	30	40	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	
		I	MD	KC7140								
	2	S	O	GD	KCU40	50	60	70	mm/r	0,04–0,06	0,05–0,08	0,06–0,10
			I	LD	KCU40							
		U	O	GD	KCU40	30	40	50	mm/r	0,04–0,06	0,05–0,08	0,06–0,10
			I	LD	KC7140							
		I	O	MD	KC7140	25	30	40	mm/r	0,04–0,06	0,05–0,08	0,06–0,10
			I	MD	KC7140							
	3	S	O	GD	KCU40	70	80	90	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	LD	KCU40							
		U	O	GD	KCU40	50	60	70	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	LD	KC7140							
		I	O	MD	KC7140	30	40	50	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	MD	KC7140							
	4	S	O	GD	KCU40	70	80	90	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	LD	KCU40							
		U	O	GD	KCU40	50	60	70	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	LD	KC7140							
		I	O	MD	KC7140	30	40	50	mm/r	0,05–0,08	0,06–0,10	0,06–0,10
			I	MD	KC7140							

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I = Interrupted cutting conditions

Pocket seat: I = Inboard insert;
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➤ Drill Fix™ DFSP™

DFSP is the new name of the now-extended Drill Fix DFS™ indexable drilling platform. The standard diameter range is now expanded starting from 14–55mm (.551–2.125") in L/D ratios 2 x D and 3 x D. Like the DFS platform, the DFSP platform combines the economically squared outboard insert with the superior centring capabilities of the trigon inboard insert. DFSP indexable drills offer increased metal removal rates combined with high surface quality and hole straightness.

Boost your productivity even further and achieve outstanding results in steel, stainless steel, and cast iron with the latest Beyond™ insert grades.

Features and Benefits

Higher Productivity and Profitability

- Achieve highest metal removal rates and excellent chip evacuation from advanced chip flutes and non-central and increased cooling channels.
- Squared outboard inserts offer four economic cutting edges.

Versatility

- Use where speed and economy are prime considerations.
- Use DFSP drills in straight holes, inclined entries and exits, interrupted cuts, and rough or welded entry surfaces.
- Use X-offset on turning machines to adjust the drill diameter and eliminate the need for specials in many applications, and on machining centres to reach tolerance optimisation.
- Eccentric chuck available as standard.
- Quick and easy insert grade and/or geometry change to address material and application changes.

Boost your productivity even further with the latest Beyond™ insert grades.

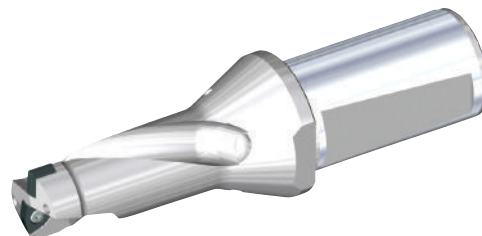
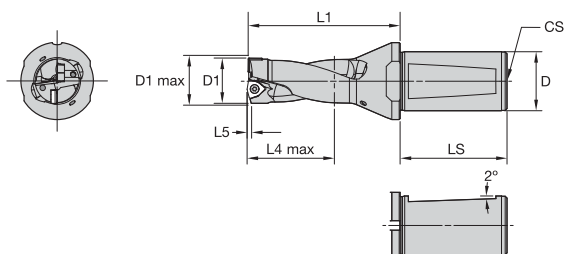
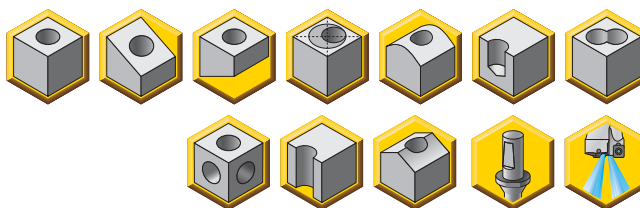


Reliability

- High accuracy holes in any feed rates.
- Gain outstanding results using Beyond grades for DFT™ and SPGX/SPPX inserts.
- High wear resistance in interrupted cuts due to squared outboard insert.



- DFSP combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 2 x D • Metric**

D 20		D1	D1 max	L1	L4 max	L5	LS	gage insert outside	gage insert inside
order #	catalogue #								
5689537	DFSP140R2WD20M	14,00	15,00	50,0	28,0	0,3	45	SPGX0502..	DFTX202..
5689539	DFSP145R2WD20M	14,50	15,50	53,0	29,0	0,4	45	SPGX0502..	DFTX202..
5689541	DFSP150R2WD20M	15,00	16,00	54,0	30,0	0,4	45	SPGX0502..	DFTX202..
5689543	DFSP155R2WD20M	15,50	16,50	55,0	31,0	0,4	45	SPGX0502..	DFTX202..
5689545	DFSP160R2WD20M	16,00	17,00	56,0	32,0	0,4	45	SPGX0502..	DFTX202..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +1mm.

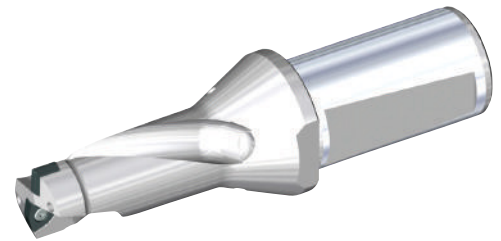
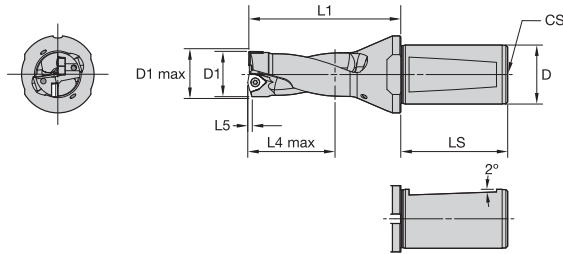
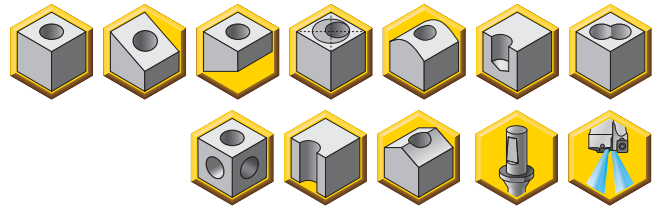
■ **Spare Parts**

diameter range	gage insert inside	inboard insert screw	tightening torque Nm	gage insert outside	outboard insert screw	tightening torque Nm	Torx driver	Torx size
14.00–17.00	DFTX202..	193.281	0,6	SPGX0502..	193.281	0,6	170.370	T6

WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

- DFSP combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 2 x D • Metric**

D 32		D1	D1 max	L1	L4 max	L5	LS	CS	gage insert outside	gage insert inside
5689546	DFSP165R2WD32M	16,50	17,50	62,0	33,0	0,5	58	—	SPGX0502..	DFTX202..
5689548	DFSP170R2WD32M	17,00	18,00	63,0	34,0	0,5	58	—	SPGX0502..	DFTX202..
5689549	DFSP175R2WD32M	17,50	18,50	64,0	35,0	0,5	58	—	SPGX0603..	DFT0303..
5689550	DFSP180R2WD32M	18,00	19,00	65,0	36,0	0,5	58	—	SPGX0603..	DFT0303..
5689551	DFSP185R2WD32M	18,50	19,50	66,0	37,0	0,6	58	—	SPGX0603..	DFT0303..
5689552	DFSP190R2WD32M	19,00	20,00	67,0	38,0	0,6	58	—	SPGX0603..	DFT0303..
5689553	DFSP195R2WD32M	19,50	20,50	68,0	39,0	0,6	58	—	SPGX0603..	DFT0303..
5689554	DFSP200R2WD32M	20,00	21,00	72,0	40,0	0,6	58	—	SPGX0603..	DFT0303..
5689555	DFSP210R2WD32M	21,00	22,00	74,0	42,0	0,7	58	—	SPGX0603..	DFT0303..
5689556	DFSP220R2WD32M	22,00	23,00	76,0	44,0	0,5	58	—	SPGX0703..	DFT05T3..
5689557	DFSP230R2WD32M	23,00	24,00	78,0	46,0	0,6	58	—	SPGX0703..	DFT05T3..
5692319	DFSP240R2WD32M	24,00	25,00	80,0	48,0	0,6	58	R1/4	SPGX0703..	DFT05T3..
5692320	DFSP250R2WD32M	25,00	26,00	83,0	50,0	0,7	58	R1/4	SPGX0703..	DFT05T3..
5692321	DFSP260R2WD32M	26,00	27,00	86,0	52,0	0,7	58	R1/4	SPPX09T3..	DFT05T3..
5692322	DFSP265R2WD32M	26,50	27,50	87,0	53,0	0,7	58	R1/4	SPPX09T3..	DFT05T3..
5692323	DFSP270R2WD32M	27,00	28,00	89,0	54,0	0,8	58	R1/4	SPPX09T3..	DFT05T3..
5692324	DFSP280R2WD32M	28,00	29,00	91,0	56,0	0,8	58	R1/4	SPPX09T3..	DFT05T3..
5692325	DFSP290R2WD32M	29,00	30,00	94,0	58,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
5692326	DFSP300R2WD32M	30,00	31,00	97,0	60,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
5692327	DFSP310R2WD32M	31,00	32,00	100,0	62,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
5692329	DFSP320R2WD32M	32,00	33,00	103,0	64,0	1,0	58	R1/4	SPPX09T3..	DFT05T3..
5692330	DFSP330R2WD32M	33,00	34,00	105,0	66,0	0,9	58	R1/4	SPPX1204..	DFT06T3..
5692331	DFSP340R2WD32M	34,00	35,00	108,0	68,0	0,9	58	R1/4	SPPX1204..	DFT06T3..
5692332	DFSP350R2WD32M	35,00	36,00	111,0	70,0	1,0	58	R1/4	SPPX1204..	DFT06T3..
5692333	DFSP360R2WD32M	36,00	37,00	114,0	72,0	1,0	58	R1/4	SPPX1204..	DFT06T3..
5692334	DFSP370R2WD32M	37,00	38,00	117,0	74,0	1,1	58	R1/4	SPPX1204..	DFT06T3..
5692335	DFSP375R2WD32M	37,50	38,50	118,0	75,0	1,1	58	R1/4	SPPX1204..	DFT06T3..
5692336	DFSP380R2WD32M	38,00	39,00	119,0	76,0	1,1	58	R1/4	SPPX1204..	DFT06T3..
5692337	DFSP390R2WD32M	39,00	40,00	122,0	78,0	1,2	58	R1/4	SPPX1204..	DFT06T3..
5692338	DFSP400R2WD32M	40,00	41,00	125,0	80,0	1,2	58	R1/4	SPPX1204..	DFT06T3..
5692339	DFSP410R2WD32M	41,00	42,00	128,0	82,0	1,2	58	R1/4	SPPX1204..	DFT0704..
5692340	DFSP420R2WD32M	42,00	43,00	131,0	84,0	1,3	58	R1/4	SPPX1204..	DFT0704..
5692341	DFSP430R2WD32M	43,00	44,00	133,0	86,0	1,3	58	R1/4	SPPX1204..	DFT0704..
5692342	DFSP440R2WD32M	44,00	45,00	135,0	88,0	1,4	58	R1/4	SPPX15T5..	DFT0704..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +1mm.

(continued)

(WD Shank • 2 x D • Metric — continued)

■ Spare Parts



diameter range	gage insert inside	inboard insert screw	tightening torque Nm	gage insert outside	outboard insert screw	tightening torque Nm	Torx driver	Torx size
14.00–17.00	DFTX202..	193.281	0,6	SPGX0502..	193.281	0,6	170.370	T6
17.50–21.00	DFT0303..	MS1152	0,9	SPGX0603..	MS1152	0,9	170.023	T7
22.00–25.00	DFT05T3..	193.491	2,1	SPGX0703..	192.432	1,3	170.028	T8
26.00–32.00	DFT05T3..	191.924	2,1	SPPX09T3..	191.924	2,1	170.024	T9
33.00–40.00	DFT06T3..	191.916	4	SPPX1204..	191.916	4	170.025	T15
41.00–43.00	DFT0704..	191.916	3	SPPX1204..	191.916	3	170.025	T15
44.00–48.00	DFT0704..	191.698	3	SPPX15T5..	192.433	3	170.025	T15

NOTE: To ensure proper clamping, two different screws for inserts with different threads for diameter ranges 22–25,5mm and 41–48mm are necessary. Both screws have the same Torx size.

WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

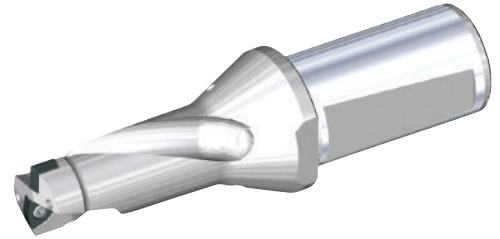
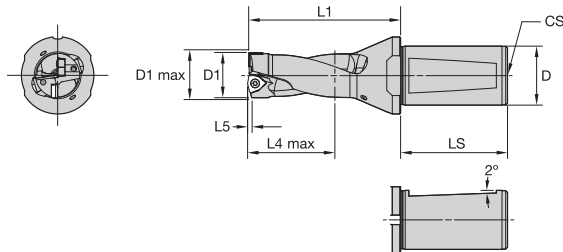
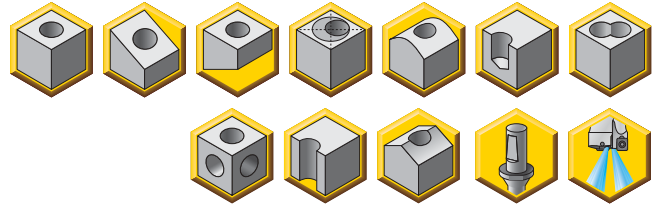
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

- DFSP combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 2 x D • Metric**

D 40		D1	D1 max	L1	L4 max	L5	LS	CS	gage insert outside	gage insert inside
order #	catalogue #									
5692343	DFSP450R2WD40M	45,00	46,00	137,0	90,0	1,4	68	R1/4	SPPX15T5..	DFT0704..
5692344	DFSP460R2WD40M	46,00	47,00	140,0	92,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
5692345	DFSP470R2WD40M	47,00	48,00	142,0	94,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
5692346	DFSP480R2WD40M	48,00	49,00	144,0	96,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
5692347	DFSP490R2WD40M	49,00	50,00	146,0	98,0	1,4	68	R1/4	SPPX15T5..	DFT0905..
5692348	DFSP500R2WD40M	50,00	51,00	148,0	100,0	1,5	68	R1/4	SPPX15T5..	DFT0905..
5692349	DFSP505R2WD40M	50,50	51,50	148,0	100,0	1,5	68	R1/4	SPPX15T5..	DFT0905..
5692350	DFSP510R2WD40M	51,00	52,00	150,0	102,0	1,6	68	R1/4	SPPX15T5..	DFT0905..
5692351	DFSP520R2WD40M	52,00	53,00	152,0	104,0	1,6	68	R1/4	SPPX15T5..	DFT0905..
5692352	DFSP530R2WD40M	53,00	54,00	154,0	106,0	1,7	68	R1/4	SPPX15T5..	DFT0905..
5692353	DFSP540R2WD40M	54,00	55,00	156,0	108,0	1,7	68	R1/4	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +1mm.

■ **Spare Parts**



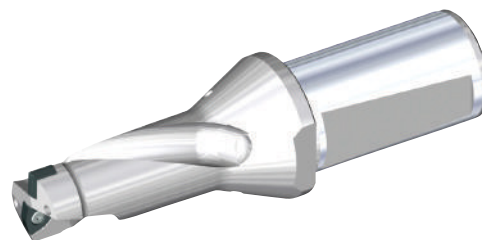
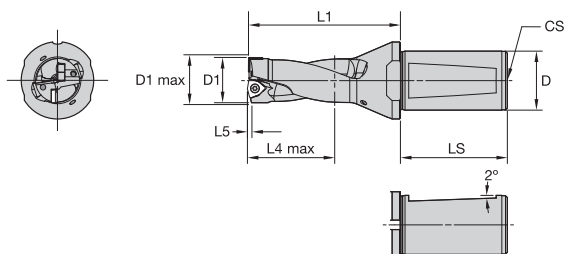
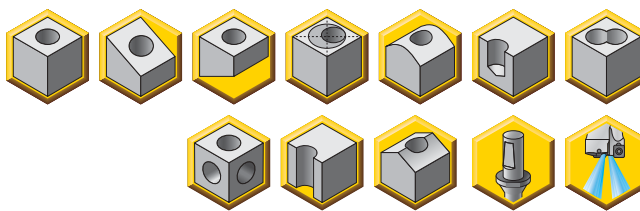
diameter range	gage insert inside	inboard insert screw	tightening torque Nm	gage insert outside	outboard insert screw	tightening torque Nm	Torx driver	Torx size
44.00–48.00	DFT0704..	191.698	3	SPPX15T5..	192.433	3	170.025	T15
49.00–55.00	DFT0905..	192.433	6	SPPX15T5..	192.433	6	170.025	T15

NOTE: To ensure proper clamping, two different screws for inserts with different threads for diameter ranges 22–25,5mm and 41–48mm are necessary. Both screws have the same Torx size.

WARNING
During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.



- DFSP combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.



■ WD Shank • 2 x D • Metric

D 50		D1	D1 max	L1	L4 max	L5	LS	CS	gage insert outside	gage insert inside
order #	catalogue #	55,00	56,00	158,0	110,0	1,8	68	R1/4	SPPX15T5..	DFT0905..

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +1mm.

■ Spare Parts

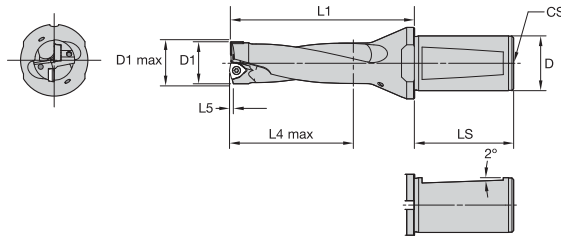
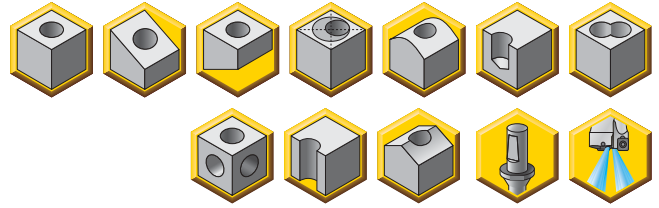


diameter range	gage insert inside	inboard insert screw	tightening torque Nm	gage insert outside	outboard insert screw	tightening torque Nm	Torx driver	Torx size
49.00–55.00	DFT0905..	192.433	6	SPPX15T5..	192.433	6	170.025	T15

WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.

- DFSP combines the economical squared outboard insert with the superior centring capabilities of the trigon inboard insert.
- Drill shipped with insert screws and Torx wrench.



■ **WD Shank • 3 x D • Metric**

		D														
20	32	40	50	D1	L4	L5	L3	CS	gage insert	gage insert						
order # catalogue #	order # catalogue #	order # catalogue #	order # catalogue #	D1 max	max				outside	inside						
5689630 DFSP140R3WD20M	—	—	—	14,00	15,00	64,0	42,0	0,3	45	—	SPGX0502..	DFTX202..				
5689631 DFSP145R3WD20M	—	—	—	14,50	15,50	67,5	43,5	0,4	45	—	SPGX0502..	DFTX202..				
5689632 DFSP150R3WD20M	—	—	—	15,00	16,00	69,0	45,0	0,4	45	—	SPGX0502..	DFTX202..				
5689633 DFSP155R3WD20M	—	—	—	15,50	16,50	70,5	46,5	0,4	45	—	SPGX0502..	DFTX202..				
5689634 DFSP160R3WD20M	—	—	—	16,00	17,00	72,0	48,0	0,4	45	—	SPGX0502..	DFTX202..				
—	5689635 DFSP165R3WD32M	—	—	16,50	17,50	78,5	49,5	0,5	58	—	SPGX0502..	DFTX202..				
—	5689636 DFSP170R3WD32M	—	—	17,00	18,00	80,0	51,0	0,5	58	—	SPGX0502..	DFTX202..				
—	5689637 DFSP175R3WD32M	—	—	17,50	18,50	81,5	52,5	0,5	58	—	SPGX0603..	DFT0303..				
—	5689638 DFSP180R3WD32M	—	—	18,00	19,00	83,0	54,0	0,5	58	—	SPGX0603..	DFT0303..				
—	5689639 DFSP185R3WD32M	—	—	18,50	19,50	84,5	55,5	0,6	58	—	SPGX0603..	DFT0303..				
—	5689640 DFSP190R3WD32M	—	—	19,00	20,00	86,0	57,0	0,6	58	—	SPGX0603..	DFT0303..				
—	5689641 DFSP195R3WD32M	—	—	19,50	20,50	87,5	58,5	0,6	58	—	SPGX0603..	DFT0303..				
—	5689642 DFSP200R3WD32M	—	—	20,00	21,00	92,0	60,0	0,6	58	—	SPGX0603..	DFT0303..				
—	5689643 DFSP210R3WD32M	—	—	21,00	22,00	95,0	63,0	0,7	58	—	SPGX0603..	DFT0303..				
—	5689644 DFSP220R3WD32M	—	—	22,00	23,00	98,0	66,0	0,5	58	—	SPGX0703..	DFT05T3..				
—	5689645 DFSP230R3WD32M	—	—	23,00	24,00	101,0	69,0	0,6	58	—	SPGX0703..	DFT05T3..				
—	5691861 DFSP240R3WD32M	—	—	24,00	25,00	104,0	72,0	0,6	58	R1/4	SPGX0703..	DFT05T3..				
—	5691862 DFSP250R3WD32M	—	—	25,00	26,00	108,0	75,0	0,7	58	R1/4	SPGX0703..	DFT05T3..				
—	5691863 DFSP260R3WD32M	—	—	26,00	27,00	112,0	78,0	0,7	58	R1/4	SPPX09T3..	DFT05T3..				
—	5691864 DFSP265R3WD32M	—	—	26,50	27,50	113,5	79,5	0,7	58	R1/4	SPPX09T3..	DFT05T3..				

NOTE for D1 max: Diameter can be adjusted. It is highly recommended to not adjust the diameter more than +1mm.

(continued)



(WD Shank • 3 x D • Metric — continued)

		D												
20		32		40		50								
order #	order #	order #	order #	order #	order #	D1	L4	L5	LS	CS	gage insert	gage insert		
catalogue #	catalogue #	catalogue #	catalogue #	catalogue #	catalogue #	max	max				outside	inside		
-	5691865 DFSP270R3WD32M	-	-	-	-	27,00	28,00	116,0	81,0	0,8	58	R1/4	SPPX09T3..	DFT05T3..
-	5691866 DFSP280R3WD32M	-	-	-	-	28,00	29,00	119,0	84,0	0,8	58	R1/4	SPPX09T3..	DFT05T3..
-	5691867 DFSP290R3WD32M	-	-	-	-	29,00	30,00	123,0	87,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
-	5691868 DFSP300R3WD32M	-	-	-	-	30,00	31,00	127,0	90,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
-	5691869 DFSP310R3WD32M	-	-	-	-	31,00	32,00	131,0	93,0	0,9	58	R1/4	SPPX09T3..	DFT05T3..
-	5691870 DFSP320R3WD32M	-	-	-	-	32,00	33,00	135,0	96,0	1,0	58	R1/4	SPPX09T3..	DFT05T3..
-	5691871 DFSP330R3WD32M	-	-	-	-	33,00	34,00	138,0	99,0	0,9	58	R1/4	SPPX1204..	DFT06T3..
-	5691872 DFSP340R3WD32M	-	-	-	-	34,00	35,00	142,0	102,0	0,9	58	R1/4	SPPX1204..	DFT06T3..
-	5691873 DFSP350R3WD32M	-	-	-	-	35,00	36,00	146,0	105,0	1,0	58	R1/4	SPPX1204..	DFT06T3..
-	5691874 DFSP360R3WD32M	-	-	-	-	36,00	37,00	150,0	108,0	1,0	58	R1/4	SPPX1204..	DFT06T3..
-	5691875 DFSP370R3WD32M	-	-	-	-	37,00	38,00	154,0	111,0	1,1	58	R1/4	SPPX1204..	DFT06T3..
-	5691876 DFSP375R3WD32M	-	-	-	-	37,50	38,50	155,5	112,5	1,1	58	R1/4	SPPX1204..	DFT06T3..
-	5691877 DFSP380R3WD32M	-	-	-	-	38,00	39,00	157,0	114,0	1,1	58	R1/4	SPPX1204..	DFT06T3..
-	5691878 DFSP390R3WD32M	-	-	-	-	39,00	40,00	161,0	117,0	1,2	58	R1/4	SPPX1204..	DFT06T3..
-	5691879 DFSP400R3WD32M	-	-	-	-	40,00	41,00	165,0	120,0	1,2	58	R1/4	SPPX1204..	DFT06T3..
-	5691880 DFSP410R3WD32M	-	-	-	-	41,00	42,00	169,0	123,0	1,2	58	R1/4	SPPX1204..	DFT0704..
-	5691881 DFSP420R3WD32M	-	-	-	-	42,00	43,00	173,0	126,0	1,3	58	R1/4	SPPX1204..	DFT0704..
-	5691882 DFSP430R3WD32M	-	-	-	-	43,00	44,00	176,0	129,0	1,3	58	R1/4	SPPX1204..	DFT0704..
-	5691883 DFSP440R3WD32M	-	-	-	-	44,00	45,00	179,0	132,0	1,4	58	R1/4	SPPX15T5..	DFT0704..
-	-	5691884 DFSP450R3WD40M	-	-	-	45,00	46,00	182,0	135,0	1,4	68	R1/4	SPPX15T5..	DFT0704..
-	-	5691885 DFSP460R3WD40M	-	-	-	46,00	47,00	186,0	138,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
-	-	5691886 DFSP470R3WD40M	-	-	-	47,00	48,00	189,0	141,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
-	-	5691887 DFSP480R3WD40M	-	-	-	48,00	49,00	192,0	144,0	1,5	68	R1/4	SPPX15T5..	DFT0704..
-	-	5691888 DFSP490R3WD40M	-	-	-	49,00	50,00	195,0	147,0	1,4	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691889 DFSP500R3WD40M	-	-	-	50,00	51,00	198,0	150,0	1,5	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691900 DFSP505R3WD40M	-	-	-	50,50	51,50	199,5	151,5	1,5	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691901 DFSP510R3WD40M	-	-	-	51,00	52,00	201,0	153,0	1,6	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691902 DFSP520R3WD40M	-	-	-	52,00	53,00	204,0	156,0	1,6	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691903 DFSP530R3WD40M	-	-	-	53,00	54,00	207,0	159,0	1,7	68	R1/4	SPPX15T5..	DFT0905..
-	-	5691904 DFSP540R3WD40M	-	-	-	54,00	55,00	210,0	162,0	1,7	68	R1/4	SPPX15T5..	DFT0905..
-	-	-	5691905 DFSP550R3WD50M	-	-	55,00	56,00	213,0	165,0	1,8	68	R1/4	SPPX15T5..	DFT0905..

(continued)

(WD Shank • 3 x D • Metric — continued)

■ Spare Parts



diameter range	gage insert inside	inboard insert screw	tightening torque Nm	gage insert outside	outboard insert screw	tightening torque Nm	Torx driver	Torx size
14.00–17.00	DFTX202..	193.281	0,6	SPGX0502..	193.281	0,6	170.370	T6
17.50–21.00	DFT0303..	MS1152	0,9	SPGX0603..	MS1152	0,9	170.023	T7
22.00–25.00	DFT05T3..	193.491	2,1	SPGX0703..	192.432	1,3	170.028	T8
26.00–32.00	DFT05T3..	191.924	2,1	SPPX09T3..	191.924	2,1	170.024	T9
33.00–40.00	DFT06T3..	191.916	3	SPPX1204..	191.916	3	170.025	T15
41.00–43.00	DFT0704..	191.916	3	SPPX1204..	191.916	3	170.025	T15
44.00–48.00	DFT0704..	191.698	3	SPPX15T5..	192.433	3	170.025	T15
49.00–55.00	DFT0905..	192.433	3	SPPX15T5..	192.433	3	170.025	T15

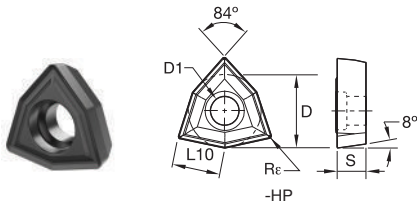
NOTE: To ensure proper clamping, two different screws for DFT™ inserts with different threads for diameter ranges 22–25mm and 41–48mm are necessary. Both screws have the same Torx size.

WARNING

During through-hole operations, a slug or disc is produced as the tool breaks through the workpiece. When the drill is stationary and the workpiece is rotating, this slug may be hurled from the chuck by centrifugal force. Provide adequate shielding to protect bystanders.



- High positive chipbreaker geometry preferred on ductile and normal chipping materials.



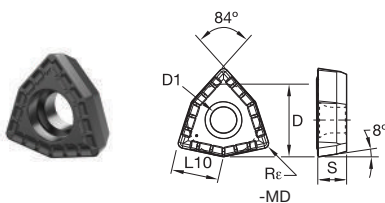
- first choice
- alternate choice

P	●	
M	●	
K	○	
N	○	●
S	○	
H		

DFT-HP

catalogue number	L10	D	D1	S	Re	KC7140	KMF
DFTX20204HP	3,31	5,00	2,25	2,45	0,40	5692807	-
DFT030204HP	3,97	6,00	2,25	2,45	0,40	2045293	1982315
DFT030304HP	3,97	6,00	2,65	2,95	0,40	2045294	1982316
DFT05T308HP	5,29	8,00	3,50	3,75	0,80	1804829	1804784
DFT06T308HP	6,62	10,00	4,40	3,75	0,80	1804830	1804785
DFT070408HP	7,94	12,00	4,40	4,75	0,80	1804832	1804790
DFT090508HP	9,92	15,00	5,50	5,25	0,85	1805013	1804791
DFT110508HP	11,64	17,60	5,85	4,88	0,80	5588935	-

- Positive chipbreaker geometry preferred for unstable cutting on longer chipping materials at high feed rates.



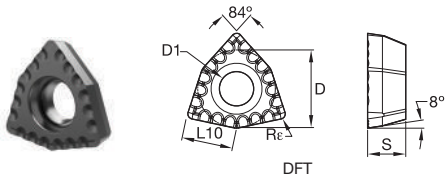
- first choice
- alternate choice

P	●	
M	●	
K	○	
N	○	
S	○	
H		

DFT-MD

catalogue number	L10	D	D1	S	Re	KC7140
DFTX20204MD	3,31	5,00	2,25	2,45	0,40	5692808
DFT030204MD	3,97	6,00	2,25	2,45	0,40	1713517
DFT030304MD	3,97	6,00	2,65	2,95	0,40	1713515
DFT05T308MD	5,29	8,00	3,40	3,75	0,80	1713513
DFT06T308MD	6,62	10,00	4,40	3,75	0,80	1713512
DFT070408MD	7,94	12,00	4,40	4,75	0,80	1713440
DFT090508MD	9,92	15,00	5,50	5,25	0,80	1713203
DFT110508MD	11,64	17,60	5,85	4,88	0,80	5588937

- DS geometry for improved control of chip flow, chip breakage, and chip curling.
- These inserts support drilling in P0 and P1 steel, higher alloyed tool steels, and stainless steels where high feed rates cannot be used to provide short chips.

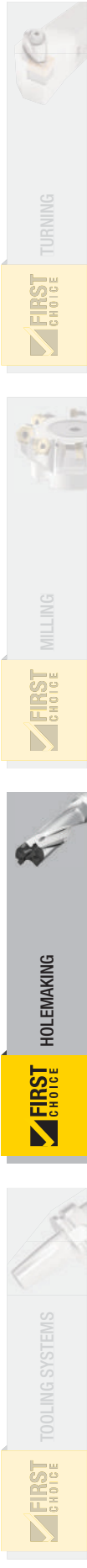


- first choice
- alternate choice

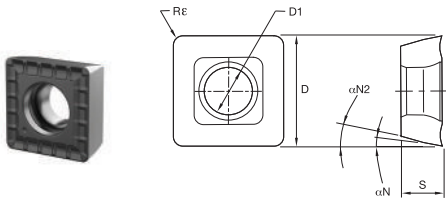
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M	<input type="checkbox"/>
K	<input type="checkbox"/>
N	<input type="checkbox"/>
S	<input type="checkbox"/>
H	<input type="checkbox"/>

■ DFT-DS

catalogue number	L10	D	D1	S	Rε	KCU40
DFTX20204DS	3,31	5,00	2,25	2,45	0,40	6025821
DFT030304DS	3,97	6,00	2,65	2,95	0,40	6025669
DFT05T308DS	5,29	8,00	3,40	3,75	0,80	6025823
DFT06T308DS	6,62	10,00	4,40	3,75	0,80	6026363
DFT070408DS	7,94	12,00	4,40	4,75	0,80	6025665
DFT090508DS	9,92	15,00	5,50	5,25	0,80	6025894



- Four cutting edge insert.



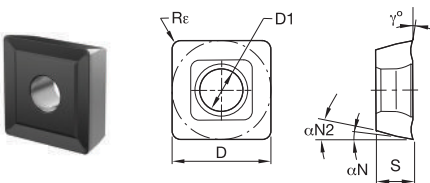
- first choice
- alternate choice

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

■ SP..X..MD

catalogue number	D	D1	S	Re	γ°	αN	αN2	KCU25	KCU40	KC7140
SPGX050204MD	5,56	2,25	2,38	0,40	16	7	11	5692728	5692800	5692802
SPGX060304MD	6,35	2,65	3,18	0,40	20	7	11	5534254	5534149	4047829
SPGX070304MD	7,94	2,85	3,18	0,40	16	7	11	5534257	5534232	4047830
SPGX070308MD	7,94	2,85	3,18	0,80	16	7	11	4040133	4042934	-
SPPX09T308MD	9,53	3,60	3,97	0,80	16	7	11	5534260	5534235	-
SPPX09T310MD	9,53	3,60	3,97	1,00	16	7	11	4040138	4042937	-
SPPX120408MD	12,70	4,60	4,76	0,80	16	7	11	5534263	5534238	4047832
SPPX120412MD	12,70	4,60	4,76	1,20	16	7	11	4040139	4042940	-
SPPX15T508MD	15,73	5,50	5,95	0,80	16	7	11	5534266	5534251	4047843
SPPX15T512MD	15,73	5,50	5,95	1,20	16	7	11	4040142	4042943	-

- Four cutting edge insert.
- Positive chipbreaker geometry preferred for stable cutting on most materials at high feed rates.
- Additional inserts with increased corner radius to support usage with Beyond™ grades.



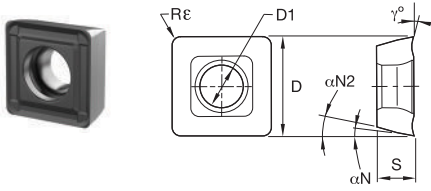
- first choice
- alternate choice

P	●	●
M	○	●
K	●	●
N	○	○
S	○	●
H		

■ SP..X..FP

catalogue number	D	D1	S	Re	γ°	αN	αN2	KCU25	KCU40
SPGX060304FP	6,35	2,65	3,18	0,40	6	7	11	5534252	5534147
SPGX070304FP	7,94	2,85	3,18	0,40	6	7	11	5534255	5534230
SPGX070308FP	7,94	2,85	3,18	0,80	6	7	11	4042840	4042933
SPPX09T308FP	9,53	3,60	3,97	0,80	6	7	11	5534258	5534233
SPPX09T310FP	9,53	3,60	3,97	1,00	6	7	11	4042841	4042936
SPPX120408FP	12,70	4,60	4,76	0,80	6	7	11	5534261	5534236
SPPX120412FP	12,70	4,60	4,76	1,20	6	7	11	4042913	4042939
SPPX15T508FP	15,73	5,50	5,95	0,80	6	7	11	5534264	5534239
SPPX15T512FP	15,73	5,50	5,95	1,20	6	7	11	4042914	4042942

- Four cutting edge insert.
- High positive chipbreaker geometry preferred on ductile and normal chipping materials.
- Additional inserts with increased corner radius to support usage with Beyond™ grades.



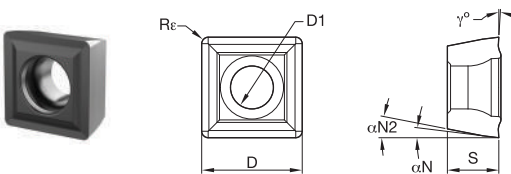
● first choice
○ alternate choice

■ SP..X..(R)HP

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

catalogue number	D	D1	S	Re	γ°	αN	αN2	KCU25	KCU40	KC7140
SPGX050204HP	5,56	2,25	2,38	0,40	10	7	11	5692727	5692729	5692801
SPGX060304RHP	6,35	2,65	3,18	0,40	10	7	11	5534253	5534148	1848593
SPGX070304RHP	7,94	2,85	3,18	0,40	10	7	11	5534256	5534231	1848597
SPGX070308HP	7,94	2,85	3,18	0,80	10	7	11	4040135	4042935	-
SPPX09T308RHP	9,53	3,60	3,97	0,80	10	7	11	5534259	5534234	1848601
SPPX09T310HP	9,53	3,60	3,97	1,00	10	7	11	4042842	4042938	-
SPPX120408RHP	12,70	4,60	4,76	0,80	10	7	11	5534262	5534237	1848605
SPPX120412HP	12,70	4,60	4,76	1,20	10	7	11	4040141	4042941	-
SPPX15T508RHP	15,73	5,50	5,95	0,80	10	7	11	5534265	5534250	3774906
SPPX15T512HP	15,73	5,50	5,95	1,20	10	7	11	4042915	4042944	-

- LP geometry for improved control of chip flow, chip breakage, and chip curling.
- These inserts support drilling in P0 and P1 steel, higher alloyed tool steels, and stainless steels where high feed rates cannot be used to provide short chips.



● first choice
○ alternate choice

■ SP..X..LP

P	●	○
M	○	○
K	○	○
N	○	○
S	○	○
H		

catalogue number	D	D1	S	Re	γ°	αN	αN2	KCU40
SPGX050204LP	5,42	2,25	2,38	0,40	4	7	11	6025822
SPGX060304LP	6,35	2,65	3,18	0,40	4	7	11	6026364
SPPX070304LP	7,80	2,85	3,18	0,40	4	7	11	6025670
SPPX09T308LP	9,38	3,60	3,97	0,80	4	7	11	6025824
SPPX120408LP	12,56	4,60	4,76	0,80	4	7	11	6025666
SPPX15T508LP	15,73	5,50	5,95	0,80	4	7	11	6025667



■ Drill Fix™ DFSP™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Metric										
						Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter							
						Range – m/min			Ø	SPGX05 DFTX2 14,00–18,00mm	SPGX06 DFT03 18,00–21,99mm	SPGX07 DFT05 22,00–25,99mm	SPGX09 DFT05 26,00–32,99mm	SPGX12 DFT06/..07 33,00–43,99mm	SPGX15 DFT07/..09 44,00–55,00mm	
						min	Starting Value	max								
P	0	S	O	LP	KCU40	310	325	360	mm/r	0,06–0,10	0,06–0,11	0,08–0,14	0,12–0,21	0,14–0,26	0,16–0,26	
		I	DS		KCU40											
		U	O	LP	KCU40	200	215	230	mm/r	0,05–0,07	0,06–0,08	0,07–0,10	0,07–0,12	0,09–0,15	0,11–0,21	
	1	S	O	FP	KCPK10	310	325	360	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	FP	KCU25	200	215	230	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	2	S	O	FP	KCPK10	310	325	360	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	FP	KCU25	200	215	230	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	3	S	O	FP	KCPK10	260	285	320	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	HP	KCU40	180	195	220	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	4	S	O	FP	KCPK10	220	250	300	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	HP	KCU40	150	180	220	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	5	S	O	HP	KCU25	180	200	220	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	HP	KCU40	120	135	150	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	6	S	O	HP	KCU25	180	200	220	mm/r	0,06–0,11	0,08–0,14	0,10–0,18	0,14–0,25	0,16–0,30	0,18–0,30	
		I	HP		KC7140											
		U	O	HP	KCU40	120	135	150	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	M	1	S	O	LP	KCU40	150	190	230	mm/r	0,05–0,08	0,06–0,10	0,07–0,12	0,10–0,16	0,12–0,21	0,14–0,24
			I	DS		KCU40										
			U	O	LP	KCU40	100	130	160	mm/r	0,05–0,07	0,06–0,08	0,07–0,10	0,05–0,10	0,06–0,13	0,08–0,16
2		S	O	LP	KCU40	150	180	210	mm/r	0,05–0,08	0,06–0,10	0,07–0,12	0,10–0,16	0,12–0,21	0,14–0,24	
		I	DS		KCU40											
		U	O	MD	KC7140	100	130	160	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,20	
3		S	O	LP	KCU40	100	130	160	mm/r	0,05–0,07	0,06–0,08	0,07–0,10	0,05–0,10	0,06–0,13	0,08–0,16	
		I	DS		KCU40											
		U	O	HP	KCU40	80	110	140	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,20	
4		S	O	MD	KC7140	60	80	100	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,18	
		I	MD		KC7140											
		U	O	MD	KC7140	60	80	100	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,18	
5	S	O	MD	KC7140	60	80	100	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,18		
	I	MD		KC7140												
	U	O	MD	KC7140	60	80	100	mm/r	0,03–0,05	0,04–0,07	0,05–0,09	0,07–0,13	0,08–0,16	0,10–0,18		

NOTE: Applying Drill Fix DFSP 5 x D requires high stability. It is highly recommended to be conservative in regard to speeds and feeds, and start with minimum values indicated.

Condition: S = Stable cutting conditions;
 U = Unstable cutting conditions;
 I = Interrupted cutting conditions

Pocket seat: I = Inboard insert;
 O = Outboard insert

All geometry/grade combinations are not part of our First Choice offering. Please refer to the current Kennametal Master Catalogue for the complete offering.

Drill Fix™ DFSP™ • Metric

Material Group		Condition	Pocket Seat	Geometry	Grade	Metric									
						Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter						
						min	Starting Value	max	Ø	SPGX05 DFTX2 14,00–18,00mm	SPGX06 DFT03 18,00–21,99mm	SPGX07 DFT05 22,00–25,99mm	SPGX09 DFT05 26,00–32,99mm	SPGX12 DFT06/.07 33,00–43,99mm	SPGX15 DFT07/.09 44,00–55,00mm
K	1	S	O	FP	KCPK10	200	240	300	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	HP	KCU40										
		I	HP	HP	KCU25	120	155	200	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28
	2	S	O	FP	KCPK10	180	220	260	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	HP	KCU40										
		I	HP	HP	KCU25	110	140	170	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28
	3	S	O	FP	KCPK10	180	220	260	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	HP	KCU40										
		I	HP	HP	KCU25	110	140	170	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28
N	1	S	O	HP	KCPK10	350	500	650	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KMF											
		I	HP	KCU40	300	400	500	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28	
	2	S	O	HP	KCPK10	300	400	500	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KMF											
		I	HP	KCU40	250	350	450	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28	
	3	S	O	HP	KCPK10	300	400	500	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KMF											
		I	HP	KCU40	175	250	325	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	4	S	O	HP	KCPK10	300	400	500	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KMF											
		I	HP	KCU40	250	350	450	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28	
	5	S	O	HP	KCPK10	300	400	500	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KMF											
		I	HP	KCU40	200	300	400	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	
	6	S	O	HP	KCU25	300	400	500	mm/r	0,07–0,12	0,10–0,16	0,12–0,20	0,16–0,28	0,18–0,32	0,20–0,34
		I	HP	KCU40	250	350	450	mm/r	0,05–0,09	0,06–0,12	0,08–0,15	0,12–0,20	0,14–0,25	0,16–0,28	
		I	HP	KMF	200	300	400	mm/r	0,04–0,06	0,05–0,08	0,06–0,10	0,09–0,15	0,11–0,18	0,13–0,25	

NOTE: Applying Drill Fix DFSP 5 x D requires high stability. It is highly recommended to be conservative in regard to speeds and feeds, and start with minimum values indicated.

Condition: S = Stable cutting conditions;
 U = Unstable cutting conditions;
 I = Interrupted cutting conditions

Pocket seat: I = Inboard insert;
 O = Outboard insert

All geometry/grade combinations are not part of our First Choice offering. Please refer to the current Kennametal Master Catalogue for the complete offering.



■ Drill Fix™ DFSP™ • Metric

Metric														
Material Group	Condition	Pocket Seat	Geometry	Grade	Cutting Speed – vc			Recommended Feed Rate (fz) by Diameter						
					Range – m/min			Ø	SPGX05 DFTX2 14,00–18,00mm	SPGX06 DFT03 18,00–21,99mm	SPGX07 DFT05 22,00–25,99mm	SPGX09 DFT05 26,00–32,99mm	SPGX12 DFT06/..07 33,00–43,99mm	SPGX15 DFT07/..09 44,00–55,00mm
					min	Starting Value	max							
S	1	S	O HP	KCU40	60	70	75	mm/r	0,03–0,06	0,04–0,08	0,05–0,10	0,08–0,12	0,10–0,15	0,12–0,18
			I MD	KC7140										
	U	O HP	KCU40	40	50	60	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I MD	KC7140											
	I	O HP	KCU40	25	30	40	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I MD	KC7140											
	2	S	O HP	KCU40	50	60	70	mm/r	0,03–0,06	0,04–0,08	0,05–0,10	0,08–0,12	0,10–0,15	0,12–0,18
			I MD	KC7140										
	U	O HP	KCU40	30	40	50	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I MD	KC7140											
	I	O HP	KCU40	25	30	40	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I MD	KC7140											
	3	S	O LP	KCU40	70	80	90	mm/r	0,03–0,06	0,04–0,08	0,05–0,10	0,08–0,12	0,10–0,15	0,12–0,18
			I DS	KC7140										
	U	O LP	KCU40	50	60	70	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I DS	KC7140											
	I	O HP	KCU40	30	40	50	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10	
		I MD	KC7140											
	4	S	O LP	KCU40	70	80	90	mm/r	0,03–0,06	0,04–0,08	0,05–0,10	0,08–0,12	0,10–0,15	0,12–0,18
			I DS	KC7140										
U	O LP	KCU40	50	60	70	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10		
	I DS	KC7140												
I	O HP	KCU40	30	40	50	mm/r	0,02–0,03	0,02–0,04	0,03–0,05	0,04–0,06	0,05–0,08	0,06–0,10		
	I MD	KC7140												

NOTE: Applying Drill Fix DFSP 5 x D requires high stability. It is highly recommended to be conservative in regard to speeds and feeds, and start with minimum values indicated.

Condition: S = Stable cutting conditions;
 U = Unstable cutting conditions;
 I = Interrupted cutting conditions

Pocket seat: I = Inboard insert;
 O = Outboard insert

All geometry/grade combinations are not part of our First Choice offering. Please refer to the current Kennametal Master Catalogue for the complete offering.







thread size range min-max	shank/dimension	hole		chamfer		helix angle	coolant		series	
		through	blind	type	form		flood	through		
High-Performance Spiral-Point Taps for Through Holes										
M3-M18	DIN 371, 374, 376	•		plug	D	L15°	•		HP Taps HSS-E-PM	T620
Multipurpose Spiral-Point Taps for Through Holes										
M3-M24	DIN 371, 374, 376	•		plug	B	0°	•		GOtap™ HSS-E	T820
High-Performance Spiral-Flute Taps for Blind Holes										
M3-M18	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		HP Taps HSS-E-PM	T630
M5-M18	DIN 371, 374, 376		•	semi-bottoming	C	45°		•	HP Taps HSS-E-PM	T631
Multipurpose Spiral-Flute Taps for Blind Holes										
M3-M20	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		GOtap HSS-E	T830
M3-M24	DIN 371, 374, 376		•	semi-bottoming	C	45°	•		GOtap HSS-E	T838
High-Performance Straight-Flute Taps for Through and Blind Holes for Short-Chipping Materials										
M4-M20	DIN 371, 376	•	•	semi-bottoming	C	0°	•		HP Taps HSS-E-PM	T640
M5-M20	DIN 371, 376		•	semi-bottoming	C	0°		•	HP Taps HSS-E-PM	T641

<input checked="" type="radio"/> first choice <input type="radio"/> alternate choice		P M K N S H	grade/ coating		page(s)	recommended cutting parameters
<input checked="" type="radio"/>	<input type="radio"/>		KP6525 KM6515		C106	C118
<input type="radio"/>	<input checked="" type="radio"/>		KSP32 KSP39		C107	C118
<input checked="" type="radio"/>	<input type="radio"/>		KP6525 KM6515		C110	C118
<input type="radio"/>	<input checked="" type="radio"/>		KP6525 KM6515		C111	C118
<input type="radio"/>	<input checked="" type="radio"/>		KSP32 KSP39		C112	C118
<input type="radio"/>	<input checked="" type="radio"/>		KSP32 KSP39		C113	C118
<input type="radio"/>	<input checked="" type="radio"/>		KP6525		C116	C118
<input type="radio"/>	<input checked="" type="radio"/>		KP6525		C117	C118

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

➤ Spiral-Point Taps for Through Holes



High-Performance Taps for Through-Hole Applications

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Nickel- and cobalt-based alloys.
- Titanium and titanium alloys.
- Aluminium.
- Hard steel.

High-Performance Beyond™ HSS-E-PM Taps

- Left-hand spiral flute for optimal chip evacuation ahead of the tap.
- Higher strength and wider range of applications versus solid carbide taps.
- Higher tapping speed capability and longer tool life than conventional HSS-E taps.
- Can be used on either conventional or synchronous tapping machines.

Multipurpose HSS-E GOtap™ Taps

- Optimised spiral-point geometry for efficient chip evacuation in through-hole applications.
- Manufactured with high vanadium HSS-E material for exceptional wear characteristics and longer tool life.
- Advanced PVD coatings to reduce tapping torque, resulting in high-quality thread finish and longer tool life.
- For use in both synchronous and non-synchronous machines, including rigid, synchronous, and tension/compression tap holders.

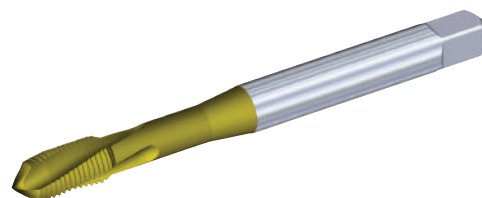
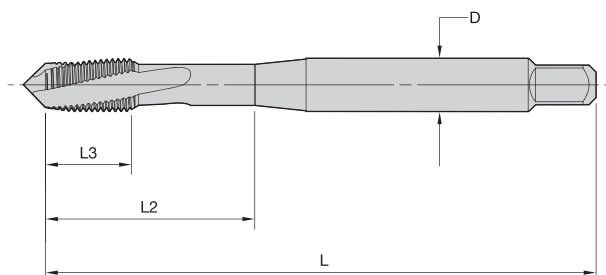


High-Performance Taps

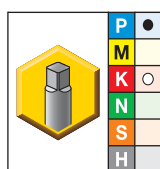
Beyond™ Left-Hand Spiral-Flute, Right-Hand Cut HSS-E-PM Taps • Through Holes



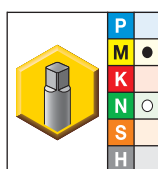
- KM6515 TiN + CrC/C for tapping stainless steel.
- KP6525 TiCN + TiN for tapping steel.



■ T620 • DIN 371, 374, and 376 • Form D Plug Chamfer • Metric • For Steel and Stainless Steel



KP6525



KM6515

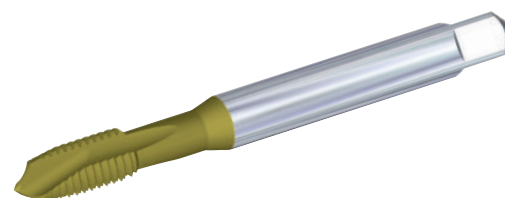
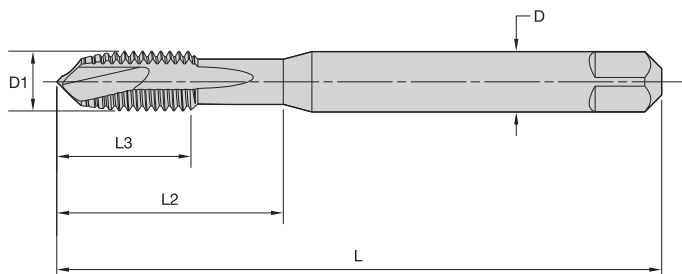
- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
3868174	T620M030X050R6HX-D1	3868079	T620M030X050R6HX-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6HX
3868175	T620M040X070R6HX-D1	3868080	T620M040X070R6HX-D1	M4 X 0,7	63	10	21	4,5	2	DIN 371	6HX
3868176	T620M050X080R6HX-D1	3868081	T620M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	2	DIN 371	6HX
3868177	T620M060X100R6HX-D1	3868082	T620M060X100R6HX-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3868178	T620M080X125R6HX-D1	3868093	T620M080X125R6HX-D1	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3868216	T620MF100X100R6HX-D4	3868111	T620MF100X100R6HX-D4	M10 X 1	90	10	35	7,0	3	DIN 374	6HX
3868217	T620MF100X125R6HX-D4	—	—	M10 X 1,25	100	15	39	7,0	3	DIN 374	6HX
3868179	T620M100X150R6HX-D1	3868094	T620M100X150R6HX-D1	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3868219	T620MF120X150R6HX-D4	3868114	T620MF120X150R6HX-D4	M12 X 1,5	100	15	39	9,0	3	DIN 374	6HX
3868180	T620M120X175R6HX-D6	3868095	T620M120X175R6HX-D6	M12 X 1,75	110	18	44	9,0	3	DIN 376	6HX
3868221	T620MF140X150R6HX-D4	3868116	T620MF140X150R6HX-D4	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
3868181	T620M140X200R6HX-D6	3868096	T620M140X200R6HX-D6	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
3868222	T620MF160X150R6HX-D4	3868117	T620MF160X150R6HX-D4	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
3868182	T620M160X200R6HX-D6	3868097	T620M160X200R6HX-D6	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
3868223	T620MF180X150R6HX-D4	3868118	T620MF180X150R6HX-D4	M18 X 1,5	110	15	50	14,0	4	DIN 374	6HX

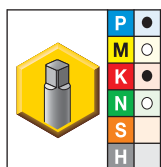
Shank Tolerance

D	tolerance h6
12–18	+0, -0,011
20–30	+0, -0,013
32–36	+0, -0,016

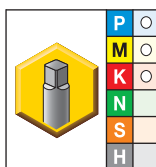
- KSP32 TiCN/TiN
- KSP39 oxide



■ T820 • DIN 371, 374, and 376 • Form B Plug Chamfer • Metric



KSP32



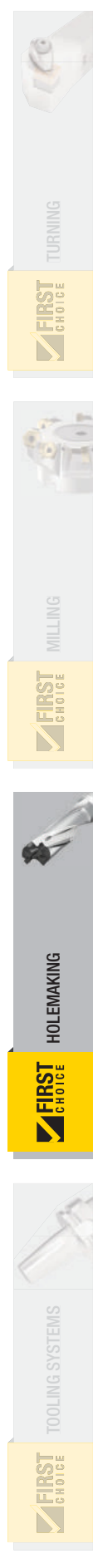
KSP39

- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
5417220	T820M030X050R6H-D1	5417221	T820M030X050R6H-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
5417224	T820M040X070R6H-D1	5417225	T820M040X070R6H-D1	M4 X 0,7	63	11	21	4,5	2	DIN 371	6H
5417228	T820M050X080R6H-D1	5417229	T820M050X080R6H-D1	M5 X 0,8	70	12	25	6,0	2	DIN 371	6H
5417232	T820M060X100R6H-D1	5417233	T820M060X100R6H-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6H
5417240	T820M080X125R6H-D1	5417241	T820M080X125R6H-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
—	—	5479781	T820MF100X100R6H-D4	M10 X 1	90	15	35	7,0	3	DIN 374	6H
—	—	5417246	T820MF100X125R6H-D4	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5417244	T820M100X150R6H-D1	5417245	T820M100X150R6H-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
—	—	5479782	T820MF120X100R6H-D4	M12 X 1	100	21	39	9,0	3	DIN 374	6H
—	—	5417253	T820MF120X125R6H-D4	M12 X 1,25	100	21	39	9,0	3	DIN 374	6H
—	—	5417254	T820MF120X150R6H-D4	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
5417251	T820M120X175R6H-D6	5417252	T820M120X175R6H-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
—	—	5479783	T820MF140X100R6H-D4	M14 X 1	100	21	47	11,0	3	DIN 374	6H
—	—	5417258	T820MF140X125R6H-D4	M14 X 1,25	100	21	47	11,0	3	DIN 374	6H
—	—	5417259	T820MF140X150R6H-D4	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
5417256	T820M140X200R6H-D6	5417257	T820M140X200R6H-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6H
—	—	5479784	T820MF160X100R6H-D4	M16 X 1	100	21	46	12,0	3	DIN 374	6H
—	—	5417263	T820MF160X150R6H-D4	M16 X 1,5	100	21	46	12,0	3	DIN 374	6H
5417261	T820M160X200R6H-D6	5417262	T820M160X200R6H-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6H
—	—	5417267	T820MF180X150R6H-D4	M18 X 1,5	110	21	50	14,0	3	DIN 374	6H
—	—	5479785	T820MF180X200R6H-D4	M18 X 2	125	30	58	14,0	3	DIN 374	6H
5417265	T820M180X250R6H-D6	5417266	T820M180X250R6H-D6	M18 X 2,5	125	30	58	14,0	3	DIN 376	6H
5417268	T820M200X250R6H-D6	5417269	T820M200X250R6H-D6	M20 X 2,5	140	30	64	16,0	3	DIN 376	6H
—	—	5417270	T820M220X250R6H-D6	M22 X 2,5	140	30	70	18,0	3	DIN 376	6H
—	—	5417271	T820M240X300R6H-D6	M24 X 3	160	36	77	18,0	3	DIN 376	6H

Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



➤ Spiral-Flute Taps for Blind Holes



High-Performance Taps for Blind-Hole Applications

- Steel and steel alloys.
- Stainless steel.
- Cast iron.
- Nickel- and cobalt-based alloys.
- Titanium and titanium alloys.
- Aluminium.
- Hard steel.

High-Performance Beyond™ HSS-E-PM Taps

- Right-hand spiral flutes with the flute form and helix angle optimised for material-specific applications.
- Higher strength and wider range of applications versus solid carbide taps.
- Higher tapping speed capability and longer tool life than conventional HSS-E taps.
- Can be used on either conventional or synchronous tapping machines with rigid or synchronous tap holders.

Multipurpose HSS-E GOtap™ Taps

- Advanced spiral-flute geometry designed for free cutting action and efficient chip evacuation in blind holes.
- Manufactured with high vanadium HSS-E material for exceptional wear characteristics and longer tool life.
- Advanced PVD coatings to reduce tapping torque, resulting in high-quality thread finish and longer tool life.
- For use in both synchronous and non-synchronous machines, including rigid, synchronous, and tension/compression tap holders.

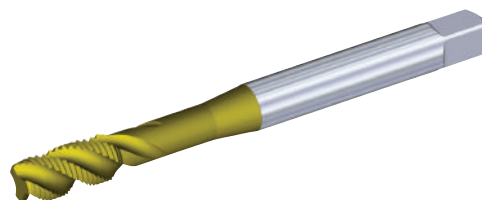
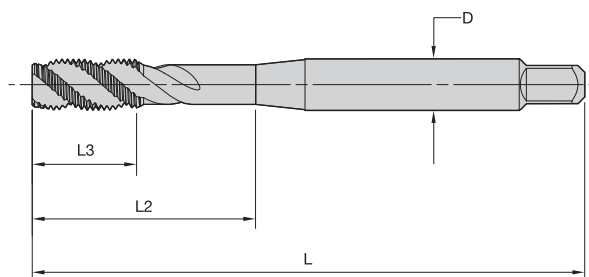
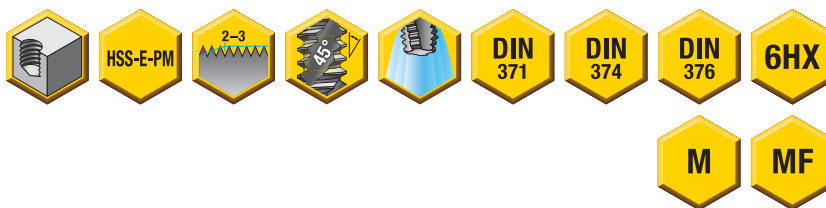


High-Performance Taps

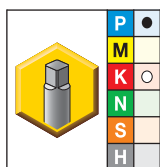
Beyond™ Spiral-Flute HSS-E-PM Taps • Blind Holes



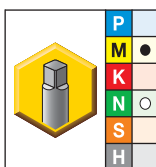
- KM6515 TiN + CrC/C for stainless steel.
- KP6525 TiCN + TiN for steel.



■ T630 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • For Steel and Stainless Steel • Rigid and Synchronous Holders



KP6525



KM6515

- first choice
- alternate choice

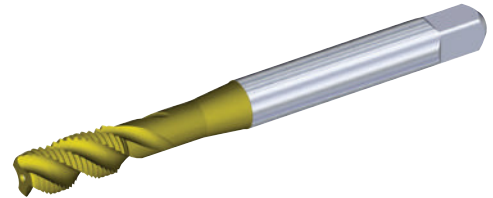
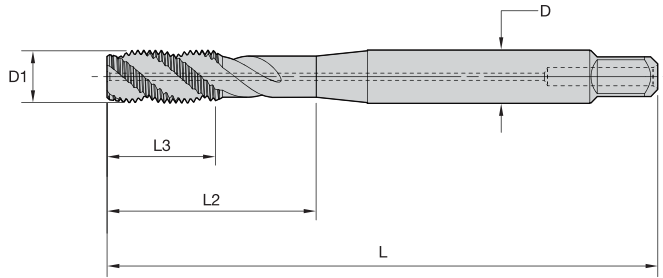
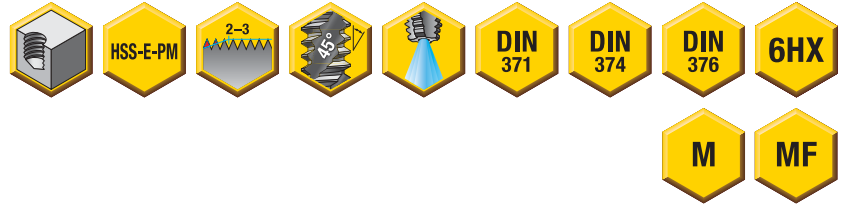
order #	catalogue #	order #	catalogue #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
3868571	T630M030X050R6HX-D1	3868825	T630M030X050R6HX-D1	M3 X 0,5	56	8	18	3,5	3	DIN 371	6HX
3868572	T630M040X070R6HX-D1	3868826	T630M040X070R6HX-D1	M4 X 0,7	63	10	21	4,5	3	DIN 371	6HX
3868923	T630M050X080R6HX-D1	3868827	T630M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
3868924	T630M060X100R6HX-D1	3868828	T630M060X100R6HX-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3868925	T630M080X125R6HX-D1	3868829	T630M080X125R6HX-D1	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3868943	T630MF100X100R6HX-D4	3868857	T630MF100X100R6HX-D4	M10 X 1	90	10	35	7,0	3	DIN 374	6HX
3868944	T630MF100X125R6HX-D4	3868858	T630MF100X125R6HX-D4	M10 X 1,25	100	15	39	7,0	3	DIN 374	6HX
3868926	T630M100X150R6HX-D1	3868830	T630M100X150R6HX-D1	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3868946	T630MF120X150R6HX-D4	3868860	T630MF120X150R6HX-D4	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
3868927	T630M120X175R6HX-D6	3868831	T630M120X175R6HX-D6	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
3868948	T630MF140X150R6HX-D4	3868862	T630MF140X150R6HX-D4	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
3868928	T630M140X200R6HX-D6	3868832	T630M140X200R6HX-D6	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
3868949	T630MF160X150R6HX-D4	3868863	T630MF160X150R6HX-D4	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
3868929	T630M160X200R6HX-D6	3868843	T630M160X200R6HX-D6	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
3868950	T630MF180X150R6HX-D4	3868864	T630MF180X150R6HX-D4	M18 X 1,5	110	15	50	14,0	4	DIN 374	6HX
3868930	T630M180X250R6HX-D6	3868844	T630M180X250R6HX-D6	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX

NOTE: Suggested for use in rigid and synchronous holders.

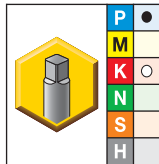
Shank Tolerance

D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011

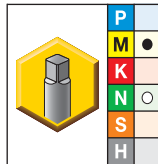
- KM6515 TiN + CrC/C for stainless steel.
- KP6525 TiCN + TiN for steel.



■ T631 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric • For Steel and Stainless Steel • Rigid and Synchronous Holders



KP6525



KM6515

- first choice
- alternate choice

order #	catalogue #	order #	catalogue #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
3868976	T631M050X080R6HX-D1	4026180	T631M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
3868977	T631M060X100R6HX-D1	4026181	T631M060X100R6HX-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6HX
3868978	T631M080X125R6HX-D1	4026182	T631M080X125R6HX-D1	M8 X 1,25	90	13	35	8,0	3	DIN 371	6HX
3869004	T631MF100X100R6HX-D4	4026232	T631MF100X100R6HX-D4	M10 X 1	90	10	35	7,0	3	DIN 374	6HX
3869005	T631MF100X125R6HX-D4	4026233	T631MF100X125R6HX-D4	M10 X 1,25	100	15	39	7,0	3	DIN 374	6HX
3868979	T631M100X150R6HX-D1	4026223	T631M100X150R6HX-D1	M10 X 1,5	100	15	39	10,0	3	DIN 371	6HX
3869006	T631MF120X125R6HX-D4	4026234	T631MF120X125R6HX-D4	M12 X 1,25	100	15	39	9,0	4	DIN 374	6HX
3869007	T631MF120X150R6HX-D4	4026235	T631MF120X150R6HX-D4	M12 X 1,5	100	15	39	9,0	4	DIN 374	6HX
3868980	T631M120X175R6HX-D6	4026224	T631M120X175R6HX-D6	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
3869008	T631MF140X125R6HX-D4	4026236	T631MF140X125R6HX-D4	M14 X 1,25	100	15	47	11,0	4	DIN 374	6HX
3869009	T631MF140X150R6HX-D4	4026237	T631MF140X150R6HX-D4	M14 X 1,5	100	15	47	11,0	4	DIN 374	6HX
3868981	T631M140X200R6HX-D6	4026225	T631M140X200R6HX-D6	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
3869010	T631MF160X150R6HX-D4	4026238	T631MF160X150R6HX-D4	M16 X 1,5	100	15	46	12,0	4	DIN 374	6HX
3868982	T631M160X200R6HX-D6	4026226	T631M160X200R6HX-D6	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
3869011	T631MF180X150R6HX-D4	4026239	T631MF180X150R6HX-D4	M18 X 1,5	110	15	50	14,0	4	DIN 374	6HX
3868993	T631M180X250R6HX-D6	4026227	T631M180X250R6HX-D6	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX

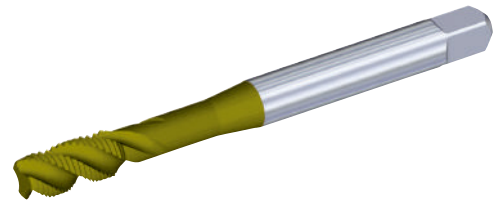
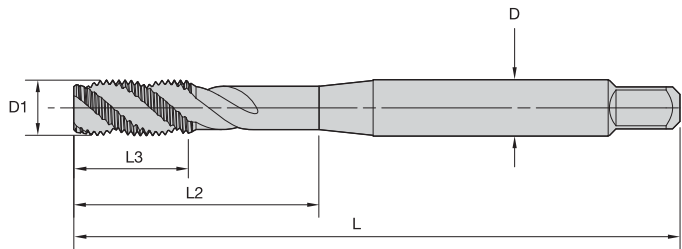
NOTE: Suggested for use in rigid and synchronous holders.

Shank Tolerance

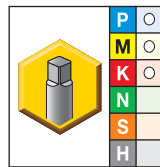
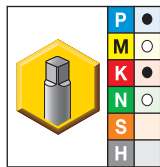
D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



- KSP32 TiCN/TiN
- KSP39 oxide



■ T830 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Rigid and Synchronous Holders



- first choice
- alternate choice

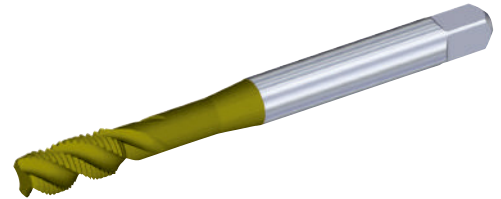
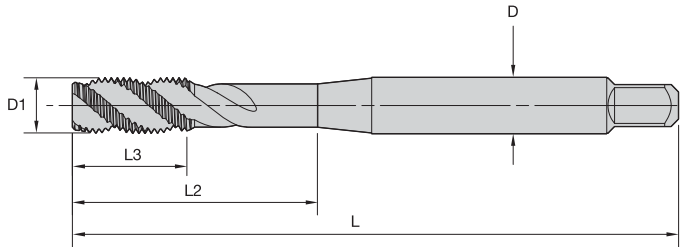
KSP32		KSP39		D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
order #	catalogue #	order #	catalogue #								
5417280	T830M030X050R6H-D1	5417281	T830M030X050R6H-D1	M3 X 0,5	56	8	18	3,5	2	DIN 371	6H
5417284	T830M040X070R6H-D1	5417285	T830M040X070R6H-D1	M4 X 0,7	63	11	21	4,5	3	DIN 371	6H
5417287	T830M050X080R6H-D1	5417288	T830M050X080R6H-D1	M5 X 0,8	70	12	25	6,0	3	DIN 371	6H
5417290	T830M060X100R6H-D1	5417291	T830M060X100R6H-D1	M6 X 1	80	12	30	6,0	3	DIN 371	6H
5417294	T830M080X125R6H-D1	5417295	T830M080X125R6H-D1	M8 X 1,25	90	15	35	8,0	3	DIN 371	6H
—	—	5417302	T830MF100X125R6H-D4	M10 X 1,25	100	18	39	7,0	3	DIN 374	6H
5417299	T830M100X150R6H-D1	—	—	M10 X 1,5	100	18	39	10,0	3	DIN 371	6G
—	—	5417300	T830M100X150R6H-D1	M10 X 1,5	100	18	39	10,0	3	DIN 371	6H
—	—	5417309	T830MF120X125R6H-D4	M12 X 1,25	100	21	39	9,0	3	DIN 374	6H
—	—	5417311	T830MF120X150R6H-D4	M12 X 1,5	100	21	39	9,0	3	DIN 374	6H
5417307	T830M120X175R6H-D6	5417308	T830M120X175R6H-D6	M12 X 1,75	110	21	44	9,0	3	DIN 376	6H
—	—	5417316	T830MF140X150R6H-D4	M14 X 1,5	100	21	47	11,0	3	DIN 374	6H
5417313	T830M140X200R6H-D6	5417314	T830M140X200R6H-D6	M14 X 2	110	24	52	11,0	3	DIN 376	6H
—	—	5417319	T830MF160X150R6H-D4	M16 X 1,5	100	21	46	12,0	3	DIN 374	6H
—	—	5417318	T830M160X200R6H-D6	M16 X 2	110	24	51	12,0	3	DIN 376	6H
—	—	5417332	T830MF180X150R6H-D4	M18 X 1,5	110	21	50	14,0	4	DIN 374	6H
—	—	5417331	T830M180X250R6H-D6	M18 X 2,5	125	30	58	14,0	4	DIN 376	6H
—	—	5417333	T830M200X250R6H-D6	M20 X 2,5	140	30	64	16,0	4	DIN 376	6H

NOTE: Suggested for use in rigid and synchronous holders.

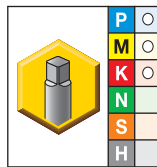
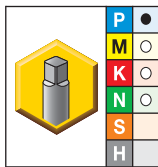
Shank Tolerance

D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052

- KSU31 TiN
- KSP39 oxide



■ T838 • DIN 371, 374, and 376 • Form C Semi-Bottoming Chamfer • Metric • Tension/Compression Holders



- first choice
- alternate choice

KSU31		KSP39		D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
6172970	T838M030X050R6H-D1	6172969	T838M030X050R6H-D1	M3 X 0,5	56	5	19	3,5	3	DIN 371	6H
6173002	T838M040X070R6H-D1	6173001	T838M040X070R6H-D1	M4 X 0,7	63	7	21	4,5	3	DIN 371	6H
6173004	T838M050X080R6H-D1	6173003	T838M050X080R6H-D1	M5 X 0,8	70	8	26	6,0	3	DIN 371	6H
6173010	T838M060X100R6H-D1	6173009	T838M060X100R6H-D1	M6 X 1	80	10	30	6,0	3	DIN 371	6H
6173016	T838MF080X100R6H-D4	6173015	T838MF080X100R6H-D4	M8 X 1	90	13	37	6,0	3	DIN 374	6H
6173018	T838M080X125R6H-D1	6173017	T838M080X125R6H-D1	M8 X 1,25	90	13	37	8,0	3	DIN 371	6H
6173024	T838MF100X100R6H-D4	6173023	T838MF100X100R6H-D4	M10 X 1	90	15	40	7,0	3	DIN 374	6H
6173026	T838MF100X125R6H-D4	6173025	T838MF100X125R6H-D4	M10 X 1,25	100	15	44	7,0	3	DIN 374	6H
6173028	T838M100X150R6H-D1	6173027	T838M100X150R6H-D1	M10 X 1,5	100	15	41	10,0	3	DIN 371	6H
6173052	T838MF120X100R6H-D4	6173051	T838MF120X100R6H-D4	M12 X 1	100	13	50	9,0	3	DIN 374	6H
6173054	T838MF120X125R6H-D4	6173053	T838MF120X125R6H-D4	M12 X 1,25	100	13	50	9,0	3	DIN 374	6H
6173056	T838MF120X150R6H-D4	6173055	T838MF120X150R6H-D4	M12 X 1,5	100	13	50	9,0	3	DIN 374	6H
6173058	T838M120X175R6H-D6	6173057	T838M120X175R6H-D6	M12 X 1,75	110	18	55	9,0	3	DIN 376	6H
6173062	T838MF140X125R6H-D4	6173061	T838MF140X125R6H-D4	M14 X 1,25	100	15	41	11,0	4	DIN 374	6H
6173064	T838MF140X150R6H-D4	6173063	T838MF140X150R6H-D4	M14 X 1,5	100	15	41	11,0	4	DIN 374	6H
6173066	T838M140X200R6H-D6	6173065	T838M140X200R6H-D6	M14 X 2	110	20	50	11,0	3	DIN 376	6H
6173069	T838MF160X150R6H-D4	6173068	T838MF160X150R6H-D4	M16 X 1,5	100	15	45	12,0	4	DIN 374	6H
6173111	T838M160X200R6H-D6	6173070	T838M160X200R6H-D6	M16 X 2	110	20	55	12,0	4	DIN 376	6H
6173113	T838MF180X150R6H-D4	6173112	T838MF180X150R6H-D4	M18 X 1,5	110	17	55	14,0	4	DIN 374	6H
6173117	T838M180X250R6H-D6	6173116	T838M180X250R6H-D6	M18 X 2,5	125	25	61	14,0	4	DIN 376	6H
6173133	T838M200X250R6H-D6	6173132	T838M200X250R6H-D6	M20 X 2,5	140	25	65	16,0	4	DIN 376	6H
6173139	T838M220X250R6H-D6	6173138	T838M220X250R6H-D6	M22 X 2,5	140	25	66	18,0	4	DIN 376	6H
6173145	T838M240X300R6H-D6	6173144	T838M240X300R6H-D6	M24 X 3	160	30	77	18,0	4	DIN 376	6H

NOTE: Suitable for tension/compression holders.

Shank Tolerance	
D mm	tolerance h9
1-3	+0, -0,025
>3-6	+0, -0,030
>6-10	+0, -0,036
>10-18	+0, -0,043
>18-30	+0, -0,052



➤ **Straight-Flute Taps** for **Through** and **Blind Holes** in **Short Chipping Materials**



High-Performance Taps for Through-Hole and Blind-Hole Applications

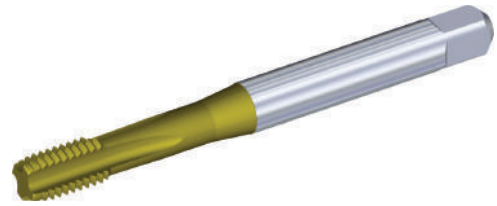
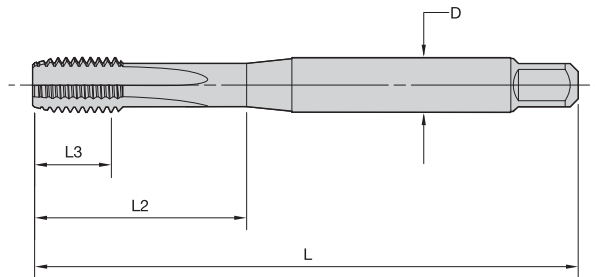
- Cast iron.
- Cast aluminium.

High-Performance Beyond™ HSS-E-PM Taps

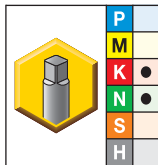
- Straight-flute design for through- and blind-hole tapping in cast iron and cast aluminium.
- Higher strength and wider range of applications versus solid carbide taps.
- Higher tapping speed capability and longer tool life than conventional HSS-E taps.
- Can be used on either conventional or synchronous tapping machines with rigid or synchronous tap holders.



- KP6525 TiCN + TiN for cast iron and cast aluminium.



- T640 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Metric • For Cast Iron and Cast Aluminium



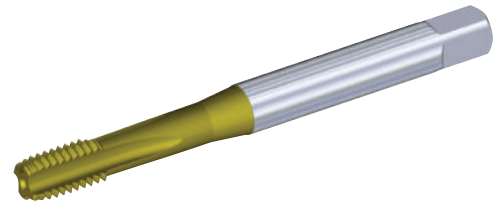
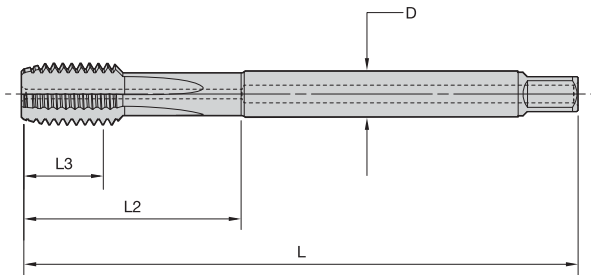
- first choice
- alternate choice

KP6525		D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
order #	catalogue #								
4035459	T640M040X070R6HX-D1	M4 X 0,7	63	10	21	4,5	3	DIN 371	6HX
4035460	T640M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4035461	T640M060X100R6HX-D1	M6 X 1	80	10	30	6,0	4	DIN 371	6HX
4035462	T640M080X125R6HX-D1	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX
4035463	T640M100X150R6HX-D1	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX
4035464	T640M120X175R6HX-D6	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
4035465	T640M140X200R6HX-D6	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
4035466	T640M160X200R6HX-D6	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
4035467	T640M180X250R6HX-D6	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
4035468	T640M200X250R6HX-D6	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX

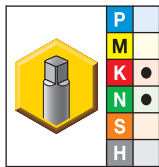
Shank Tolerance

D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011

- KP6525 TiCN + TiN for cast iron and cast aluminium.



- T641 • DIN 371 and 376 • Form C Semi-Bottoming Chamfer • Through Coolant • Metric • For Cast Iron and Cast Aluminium



KP6525

- first choice
- alternate choice

order #	catalogue #	D1 size	L	L3	L2	D	number of flutes	dimension standard	class of fit
4035525	T641M050X080R6HX-D1	M5 X 0,8	70	10	25	6,0	3	DIN 371	6HX
4035526	T641M060X100R6HX-D1	M6 X 1	80	10	30	6,0	4	DIN 371	6HX
4035527	T641M080X125R6HX-D1	M8 X 1,25	90	13	35	8,0	4	DIN 371	6HX
4035528	T641M100X150R6HX-D1	M10 X 1,5	100	15	39	10,0	4	DIN 371	6HX
4035529	T641M120X175R6HX-D6	M12 X 1,75	110	18	44	9,0	4	DIN 376	6HX
4035530	T641M140X200R6HX-D6	M14 X 2	110	20	52	11,0	4	DIN 376	6HX
4035531	T641M160X200R6HX-D6	M16 X 2	110	20	51	12,0	4	DIN 376	6HX
4035532	T641M180X250R6HX-D6	M18 X 2,5	125	25	58	14,0	4	DIN 376	6HX
4035533	T641M200X250R6HX-D6	M20 X 2,5	140	25	64	16,0	4	DIN 376	6HX

Shank Tolerance

D	tolerance h6
6	+0, -0,008
8-10	+0, -0,009
12-16	+0, -0,011



High-Performance Taps • HSS-E-PM • Metric

Material Group		Through Holes					Blind Holes				
				Range – m/min					Range – m/min		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
		P	1	T620	KP6525	20	30	45	T630	KP6525	14
	2	T620	KP6525	17	25	36	T630	KP6525	12	18	26
	3	T620	KP6525	12	15	20	T630	KP6525	8	11	14
	5	T620	KP6525	12	15	20	T630	KP6525	8	11	14
M	1	T620	KM6515	12	15	20	T630	KM6515	8	11	14
	2	T620	KM6515	9	12	16	T630	KM6515	6	8	11
	3	T620	KM6515	8	10	13	T630	KM6515	5	7	9
K	1	T640	KP6525	27	35	46	T640	KP6525	19	25	32
	2	T640	KP6525	23	30	39	T640	KP6525	16	21	27
	3	T640	KP6525	19	25	33	T640	KP6525	13	18	23
N	2	T640	KP6525	30	45	59	T640	KP6525	21	32	41
	4	T640	KP6525	7	10	15	T640	KP6525	5	7	11
S	1	T620	KM6525	8	12	18	T630	KP6525	6	8	13

NOTE: Increase speed by up to 25% when using coolant taps (T631 and T641).

GOtap™ • Metric

Material Group		Through Holes					Blind Holes				
				Range – m/min					Range – m/min		
		Tap Style	Grade	min	Starting Value	max	Tap Style	Grade	min	Starting Value	max
		P	1	T820	KSP32 KSP39	23 11	30 15	38 19	T830 T838 T830 T838	KSP32 KSU31 KSP39 KSU30	15 15 7 7
	2	T820	KSP32 KSP39	18 11	24 14	30 18	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	12 7	17 10	24 14
	3	T820	KSP32 KSP39	17 9	22 12	28 15	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	11 6	15 8	22 12
M	1	T820	KSP32 KSP39	14 8	18 10	23 13	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	9 5	13 7	18 10
	3	T820	KSP32 KSP39	11 7	15 9	19 11	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	7 4	11 6	15 9
K	2	T820	KSP32 KSP39	16 9	21 12	26 15	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	10 6	15 8	21 12
N	1	T820	KSP32 KSP39	37 20	49 27	61 34	T830, T838 T830, T838	KSP32, KSU31 KSU30, KSP39	24 19	34 19	39 27
	2	T820	KSP32 KSP39	30 16	40 21	50 26	T830 T830	KSP32 KSP32	20 10	28 15	40 21
	4	T820	KSP32 KSP39	37 20	49 27	61 33	T830 T830	KSP32 KSU30	24 13	34 19	49 27

M

D mm	P mm	Ø mm
M 1	0,25	0,75
1,1	0,25	0,85
1,2	0,25	0,95
1,4	0,3	1,1
1,6	0,35	1,25
1,7	0,35	1,35
1,8	0,35	1,45
2	0,4	1,6
2,2	0,45	1,75
2,3	0,4	1,9
2,5	0,45	2,05
2,6	0,45	2,15
3	0,5	2,5
3,5	0,6	2,9
4	0,7	3,3
4,5	0,75	3,7
5	0,8	4,2
5,5	0,9	4,6
6	1	5
7	1	6
8	1,25	6,8
9	1,25	7,8
10	1,5	8,5
11	1,5	9,5
12	1,75	10,2
14	2	12
16	2	14
18	2,5	15,5
20	2,5	17,5
22	2,5	19,5
24	3	21
27	3	24
30	3,5	26,5
33	3,5	29,5
36	4	32
39	4	35
42	4,5	37,5
45	4,5	40,5
48	5	43
52	5	47
56	5,5	50,5
60	5,5	54,5
64	6	58
68	6	62

MF

D mm		P mm	Ø mm
M 2,5	x	0,35	2,15
2,6	x	0,35	2,25
3	x	0,35	2,65
3,5	x	0,35	3,15
4	x	0,35	3,65
4	x	0,5	3,5
5	x	0,5	4,5
6	x	0,5	5,5
6	x	0,75	5,2
7	x	0,75	6,2
8	x	0,75	7,2
8	x	1	7
9	x	0,75	8,2
9	x	1	8
10	x	0,75	9,2
10	x	1	9
10	x	1,25	8,8
11	x	1	10
12	x	1	11
12	x	1,25	10,8
12	x	1,5	10,5
14	x	1	13
14	x	1,25	12,8
14	x	1,5	12,5
15	x	1	14
16	x	1	15
16	x	1,5	14,5
18	x	1	17
18	x	1,5	16,5
18	x	2	16
20	x	1	19
20	x	1,5	18,5
20	x	2	18
22	x	1	21
22	x	1,5	20,5
22	x	2	20
24	x	1	23
24	x	1,5	22,5
24	x	2	22
25	x	1,5	23,5
26	x	1,5	24,5
27	x	1,5	25,5
27	x	2	25
28	x	1,5	26,5
28	x	2	26
30	x	1,5	28,5
30	x	2	28
32	x	1,5	30,5
32	x	2	30
33	x	1,5	31,5
33	x	2	31
34	x	1,5	32,5

D mm		P mm	Ø mm
M 35	x	1,5	33,5
36	x	1,5	34,5
36	x	2	34
36	x	3	33
38	x	1,5	36,5
39	x	1,5	37,5
39	x	2	37
39	x	3	36
40	x	1,5	38,5
40	x	2	38
42	x	1,5	40,5
42	x	2	40
42	x	3	39
45	x	1,5	43,5
45	x	2	43
45	x	3	42
48	x	1,5	46,5
48	x	2	46
48	x	3	45
50	x	1,5	48,5
50	x	2	48
52	x	1,5	50,5
52	x	2	50
52	x	3	49
56	x	3	53
56	x	4	52
60	x	4	56
64	x	3	61
64	x	4	60
68	x	4	64
70	x	3	67
70	x	4	66
72	x	3	69
72	x	4	68
72	x	6	66
76	x	3	73
76	x	4	72
76	x	6	70
80	x	4	76
80	x	6	74
85	x	3	82
85	x	4	81
90	x	3	87
90	x	4	86
90	x	6	84
95	x	6	89
100	x	4	96
100	x	6	94
110	x	6	104
115	x	3	112
120	x	4	116
120	x	6	114



Tooling Systems



Tooling Systems

Hydraulic Chucks	D2-D7
Shrink Fit Toolholders.....	D8-D11
Shell Mill Adaptors	D12-D18



➤ Hydraulic Chucks

HydroForce™



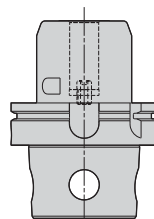
For any application, providing an unparalleled combination of accuracy and clamping force.

Optimum performance for round-tool applications.

Activation of the chuck is achieved by turning the piston screw, which pressurises the hydraulic fluid and exerts force on a thin-walled membrane along the length of the clamping bore.

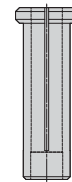
This highly concentric clamping force not only holds the tool shank more securely, but also produces a dampening effect that reduces vibration and helps eliminate micro-cracking on cutting edges.

Portfolio

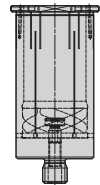


HydroForce™

Accessories



Reducer sleeves



HydroForce Safe-Lock™ reducer sleeves with pullout protection.

HydroForce™

Highest clamping force in the industry.

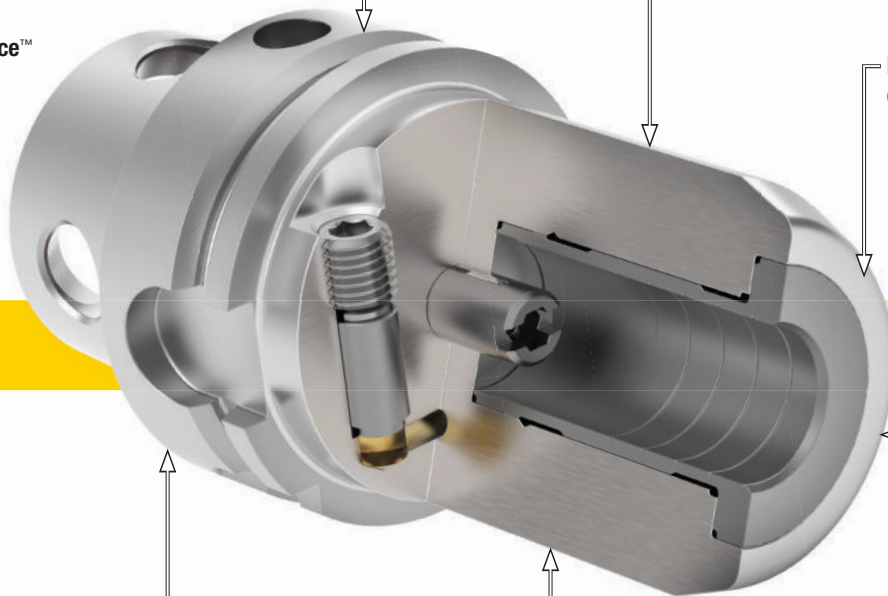
Diameter 20 and 32mm: Runout of 3 μm or less at 2.5x diameter overhang [6 μm for diameter 50mm].

Balanced G2.5 at 25,000 RPM, delivering precision.

3 clamping bore sizes for all applications. 20, 32, and 50mm.

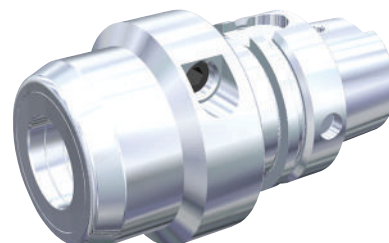
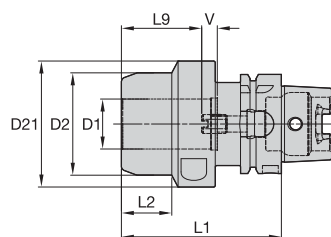
3x higher clamping force than High-Performance Line.

Short projection length and 40% thicker front wall enabling high cutting parameters and optimum surface quality.



Hydraulic Chucks

HydroForce™ High-Torque Line • HSK A

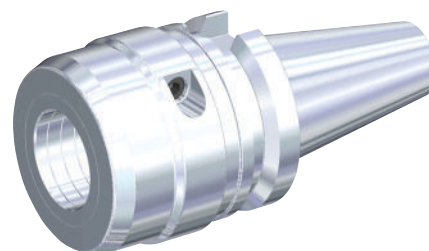
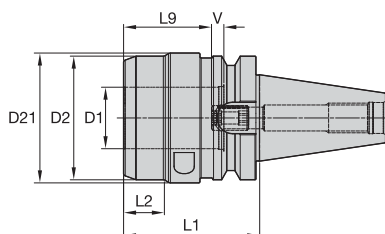


Metric

CSMS	order number	catalogue number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	kg
HSK63A													
	5520975	HSK63AHCTHT20090M	20	53	—	90	64	41	10	170.135	5 mm	5 mm	1,54
	6048237	HSK63AHCTHT32100M	32	65	80	100	32	51	10	170.136	6 mm	6 mm	2,25
HSK100A													
	5520976	HSK100AHCTHT20090M	20	65	—	90	61	41	10	170.135	5 mm	5 mm	3,38
	5520977	HSK100AHCTHT32100M	32	80	—	100	71	51	10	170.136	6 mm	6 mm	4,29

NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
 Supplied with stop screw.
 Actuation wrench must be ordered separately.
 For diameter D1 32mm, use an L-shape Allen wrench with side length of approximately 200mm.

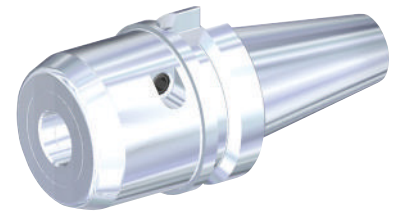
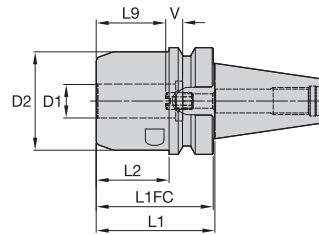
HydroForce™ High-Torque Line • BT AD



Metric

CSMS	order number	catalogue number	D1	D2	D21	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	kg
BT40													
	5520971	BT40HCTHT20070M	20	58	—	70	43	41	10	170.135	5 mm	5 mm	1,67
	6048257	BT40HCTHT32080M	32	80	—	80	80	51	10	170.136	6 mm	6 mm	2,31
BT50													
	5520972	BT50HCTHT32090M	32	80	—	90	52	51	10	170.136	6 mm	6 mm	5,08

NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
 Supplied with stop screw.
 Actuation wrench must be ordered separately.
 For diameter D1 32mm, use an L-shape Allen wrench with side length of approximately 200mm.

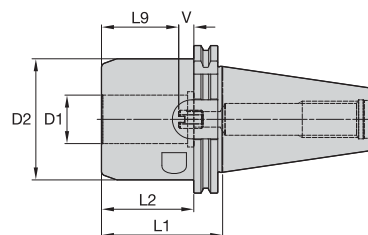


■ Metric

CSMS	order number	catalogue number	D1	D2	L1	L1FC	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	kg
BTKV40	5520993	BTKV40HCTHT20070M	20	58	70	69	43	41	10	170.135	5 mm	5 mm	1,68
	6048259	BTKV40HCTHT32080M	32	80	80	79	79	51	10	170.136	6 mm	6 mm	2,32
BTKV50	5520994	BTKV50HCTHT32090M	32	80	90	89	52	51	10	170.136	6 mm	6 mm	5,13

NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
 Supplied with stop screw.
 Actuation wrench must be ordered separately.
 For diameter D1 32mm, use an L-shape Allen wrench with side length of approximately 200mm.

HydroForce™ High-Torque Line • DV AD



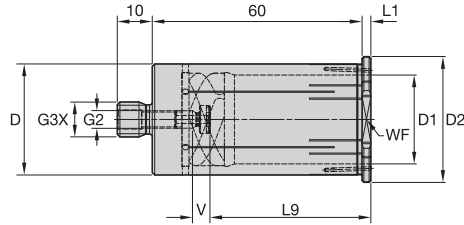
■ Metric

CSMS	order number	catalogue number	D1	D2	L1	L2	L9	V	actuation wrench	wrench size actuation screw	wrench size stop screw	kg
DV40	5520973	DV40HCTHT20070M	20	58	70	51	41	10	170.135	5 mm	5 mm	1,58
	6048255	DV40HCTHT32080M	32	80	80	80	51	10	170.136	6 mm	6 mm	2,31
DV50	5520974	DV50HCTHT32080M	32	80	80	61	51	10	170.136	6 mm	6 mm	4,45

NOTE: Do not overtorque actuation screw. Tighten by hand until stop is felt.
 Supplied with stop screw.
 Actuation wrench must be ordered separately.
 For diameter D1 32mm, use an L-shape Allen wrench with side length of approximately 200mm.



- One-piece design with slot configuration to seal coolant.
- Cutting tool must be cylindrical and have the Safe-Lock™ grooves on the shank.
- Sleeve must be screwed completely into the hydraulic chuck until shoulder mates against the hydraulic chuck front face.
- Cutting tool shank holding requirement at least to L9 dimension.



■ Metric

order number	catalogue number	D1	D	D2	L1	L9	V	G3X	G2	WF
5998607	32MHCSFC120M	12	32	36	2,5	41	4	M12	M6	32
5998608	32MHCSFC140M	14	32	36	2,5	41	4	M12	M6	32
5998609	32MHCSFC160M	16	32	36	2,5	44	4	M12	M6	32
5998610	32MHCSFC200M	20	32	36	2,5	46	4	M12	M6	32
5998751	32MHCSFC250M	25	32	36	2,5	47	4	M12	M6	32

NOTE: Inserting the cutting tool less than the gripping length (L9) of the sleeve can permanently damage the sleeve and hydraulic chuck. Recommended to clean coolant holes periodically with air.

TURNING

FIRST CHOICE

MILLING

FIRST CHOICE

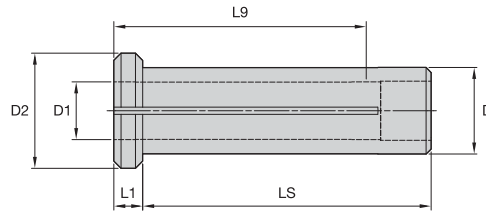
HOLEMAKING

FIRST CHOICE

TOOLING SYSTEMS

FIRST CHOICE

- One-piece design with slot configuration to seal coolant.
- Cutting tool must be cylindrical and have a through hole when using coolant.
- Sleeve must be inserted completely into the hydraulic chuck until shoulder mates against the hydraulic chuck front face.
- Cutting tools must be in full contact with the sleeve bore length (L9).



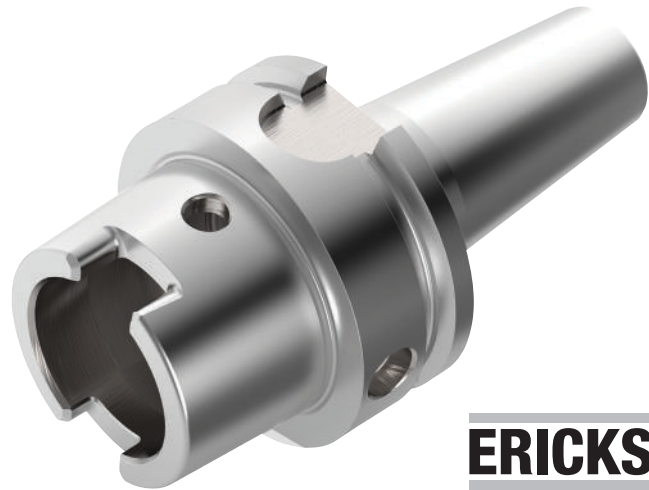
■ Metric with Metric Bores

CSMS	order number	catalogue number	D1	D	D2	L1	L9	LS
20M	3026648	20MHC030M	3	20	25	4	28	50
	3026649	20MHC040M	4	20	25	4	28	50
	3026650	20MHC050M	5	20	25	4	28	50
	3026651	20MHC060M	6	20	25	4	36	50
	3026652	20MHC070M	7	20	25	4	37	50
	3026653	20MHC080M	8	20	25	4	37	50
	3026654	20MHC090M	9	20	25	4	38	50
	3026655	20MHC100M	10	20	25	4	40	50
	3026656	20MHC110M	11	20	25	4	40	50
	3026657	20MHC120M	12	20	25	4	45	50
	3026658	20MHC130M	13	20	25	4	45	50
	3026659	20MHC140M	14	20	25	4	45	50
	3026660	20MHC150M	15	20	25	4	45	50
	3026661	20MHC160M	16	20	25	4	48	50
32M	3026675	32MHC060M	6	32	36	4	37	60
	3026676	32MHC070M	7	32	36	4	37	60
	3026677	32MHC080M	8	32	36	4	37	60
	3026678	32MHC090M	9	32	36	4	37	60
	3026679	32MHC100M	10	32	36	4	40	60
	3026680	32MHC110M	11	32	36	4	41	60
	3026681	32MHC120M	12	32	36	4	45	60
	3026682	32MHC130M	13	32	36	4	45	60
	3026683	32MHC140M	14	32	36	4	46	60
	3026684	32MHC150M	15	32	36	4	46	60
	3026685	32MHC160M	16	32	36	4	48	60
	3026686	32MHC170M	17	32	36	4	48	60
	3026687	32MHC180M	18	32	36	4	49	60
	3026691	32MHC190M	19	32	36	4	49	60
	3026688	32MHC200M	20	32	36	4	50	60
	3026689	32MHC220M	22	32	36	4	51	60
	3026690	32MHC250M	25	32	36	4	57	60

NOTE: Inserting the cutting tool less than the full gripping length (L9) of the sleeve can permanently damage the sleeve and hydraulic chuck. Full length of the gripping bore needs to be maintained to achieve maximum accuracy, safety, and coolant sealing feature.



➤ Shrink Fit Toolholders

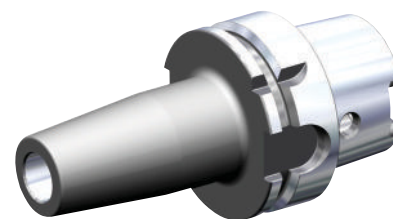
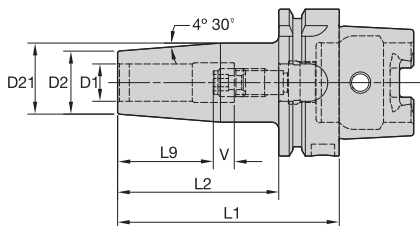


ERICKSON™

ERICKSON™ Shrink Fit toolholders allow for high-precision, high productivity machining in demanding conditions while providing optimum value.

They offer stability and low runout, leading to excellent surface finish, dimensional accuracy, and lower overall production times.

- Broad selection of back end connection types (HSK63A, HSK100A, BT40, BT50, and PSC63).
- Balanced to G2.5 @ 25,000 RPM.
- Compatible with steel and carbide shanks.
- Runout accuracy <math><3 \mu\text{m}</math> at 3 x D for extended tool life and consistent surface finishing.
- Through coolant capability.

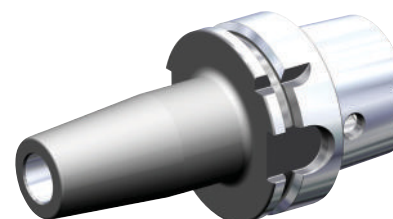
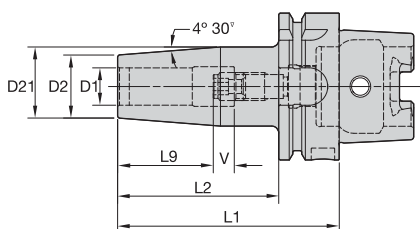


■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6199621	HSK63ATTGL03080M	3	10	—	80	54	—	—	—	—	0,71
6199622	HSK63ATTGL04080M	4	10	—	80	54	—	—	—	—	0,71
6199623	HSK63ATTGL06080M	6	21	27	80	54	26	10	TTSS05014M	2.5 mm	0,84
6199624	HSK63ATTGL08080M	8	21	27	80	54	26	10	TTSS06014M	3 mm	0,83
6199625	HSK63ATTGL10085M	10	24	32	85	59	32	10	TTSS08014M	4 mm	0,91
6199626	HSK63ATTGL12090M	12	24	32	90	64	37	10	TTSS10014M	5 mm	0,93
6199627	HSK63ATTGL14090M	14	27	34	90	64	37	10	TTSS10014M	5 mm	0,98
6199628	HSK63ATTGL16095M	16	27	34	95	69	40	10	TTSS12014M	6 mm	1,00
6199629	HSK63ATTGL18095M	18	33	42	95	69	40	10	TTSS12014M	6 mm	1,17
6199630	HSK63ATTGL20100M	20	33	42	100	74	42	10	TTSS16014M	8 mm	1,20
6199631	HSK63ATTGL25115M	25	44	53	115	89	48	10	TTSS16014M	8 mm	1,78

NOTE: For technical information, visit kennametal.com.

HSK100A Shank Tools

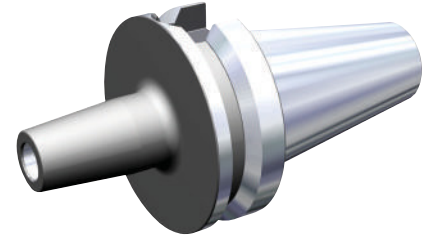
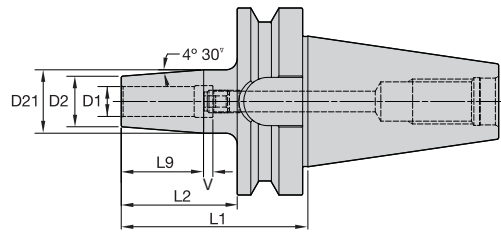


■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6201850	HSK100ATTGL06085M	6	21	27	85	56	26	10	TTSS05014M	2.5 mm	2,20
6201871	HSK100ATTGL08085M	8	21	27	85	56	26	10	TTSS06014M	3 mm	2,20
6201872	HSK100ATTGL10090M	10	24	32	90	61	32	10	TTSS08014M	4 mm	2,28
6201873	HSK100ATTGL12095M	12	24	32	95	66	37	10	TTSS10014M	5 mm	2,30
6201874	HSK100ATTGL14095M	14	27	34	95	66	37	10	TTSS10014M	5 mm	2,35
6201875	HSK100ATTGL16100M	16	27	34	100	71	40	10	TTSS12014M	6 mm	2,37
6201876	HSK100ATTGL18100M	18	33	42	100	71	40	10	TTSS12014M	6 mm	2,55
6201877	HSK100ATTGL20105M	20	33	42	105	76	42	10	TTSS16014M	8 mm	2,58
6201878	HSK100ATTGL25115M	25	44	53	115	86	48	10	TTSS16014M	8 mm	3,11

NOTE: For technical information, visit kennametal.com.



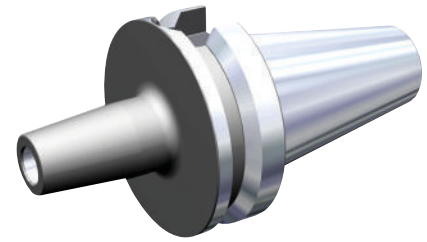
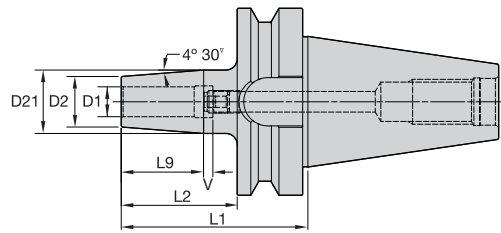


■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6201779	BT40TTGL06090M	6	21	27	90	63	26	10	TTSS05014M	2.5 mm	1,23
6201780	BT40TTGL08090M	8	21	27	90	63	26	10	TTSS06014M	3 mm	1,23
6201831	BT40TTGL10090M	10	24	32	90	63	32	10	TTSS08014M	4 mm	1,29
6201832	BT40TTGL12090M	12	24	32	90	63	37	10	TTSS10014M	5 mm	1,28
6201834	BT40TTGL14090M	14	27	34	90	63	37	10	TTSS10014M	5 mm	1,33
6201835	BT40TTGL16090M	16	27	34	90	63	40	10	TTSS12014M	6 mm	1,30
6201836	BT40TTGL18090M	18	33	42	90	63	40	10	TTSS12014M	6 mm	1,46
6201837	BT40TTGL20090M	20	33	42	90	63	42	10	TTSS16014M	8 mm	1,43
6201838	BT40TTGL25100M	25	44	53	100	73	48	10	TTSS16014M	8 mm	1,88

NOTE: For technical information, visit kennametal.com.

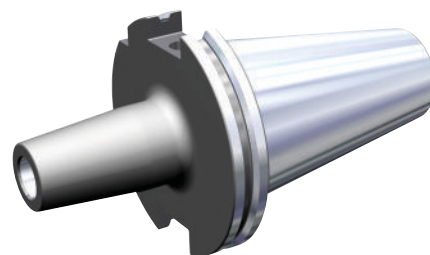
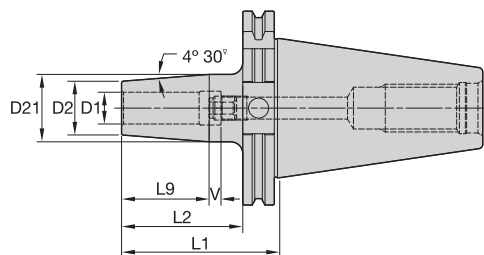
BT50 Shank Tools



■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6201430	BT50TTGL06100M	6	21	27	100	62	26	10	TTSS05014M	2.5 mm	3,91
6201441	BT50TTGL08100M	8	21	27	100	62	26	10	TTSS06014M	3 mm	3,91
6201442	BT50TTGL10100M	10	24	32	100	62	32	10	TTSS08014M	4 mm	3,97
6201443	BT50TTGL12100M	12	24	32	100	62	37	10	TTSS10014M	5 mm	3,95
6201444	BT50TTGL14100M	14	27	34	100	62	37	10	TTSS10014M	5 mm	4,00
6201445	BT50TTGL16100M	16	27	34	100	62	40	10	TTSS12014M	6 mm	3,98
6201446	BT50TTGL18100M	18	33	42	100	62	40	10	TTSS12014M	6 mm	4,13
6201447	BT50TTGL20100M	20	33	42	100	62	42	10	TTSS16014M	8 mm	4,10
6201448	BT50TTGL25100M	25	44	53	100	62	48	10	TTSS16014M	8 mm	4,37

NOTE: For technical information, visit kennametal.com.

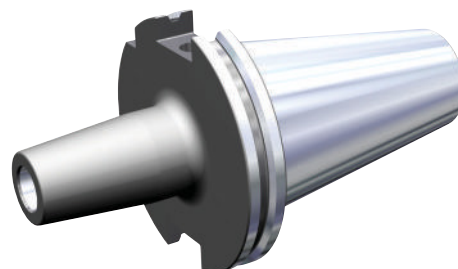
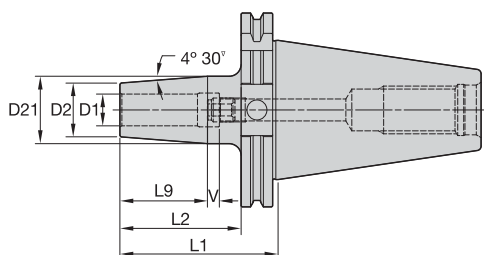


■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6201356	DV40TTGL06080M	6	21	27	80	61	26	10	TTSS05014M	2.5 mm	1,06
6201357	DV40TTGL08080M	8	21	27	80	61	26	10	TTSS06014M	3 mm	1,05
6201358	DV40TTGL10080M	10	24	32	80	61	32	10	TTSS08014M	4 mm	1,07
6201359	DV40TTGL12080M	12	24	32	80	61	37	10	TTSS10014M	5 mm	1,10
6201360	DV40TTGL14080M	14	27	34	80	61	37	10	TTSS10014M	5 mm	1,15
6201421	DV40TTGL16080M	16	27	34	80	61	40	10	TTSS12014M	6 mm	1,13
6201424	DV40TTGL18080M	18	33	42	80	61	40	10	TTSS12014M	6 mm	1,27
6201425	DV40TTGL20080M	20	33	42	80	61	42	10	TTSS16014M	8 mm	1,24
6201426	DV40TTGL25100M	25	44	53	100	81	48	10	TTSS16014M	8 mm	1,80

NOTE: For technical information, visit kennametal.com.

DV50 Shank Tools



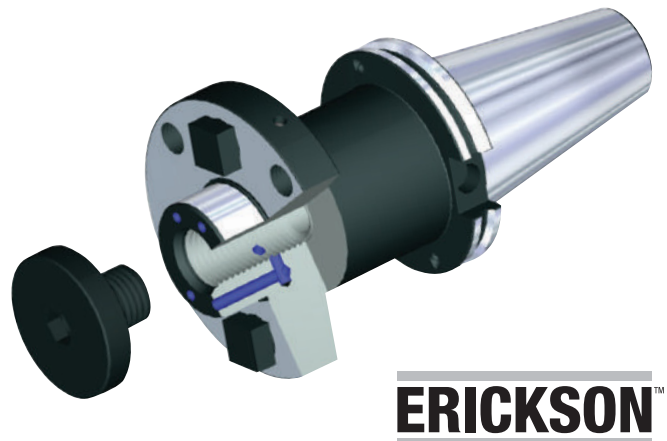
■ TTGL • Metric

order number	catalogue number	D1	D2	D21	L1	L2	L9	V	stop screw	wrench size stop screw	kg
6201839	DV50TTGL06080M	6	21	27	80	61	26	10	TTSS05014M	2.5 mm	2,89
6201840	DV50TTGL08080M	8	21	27	80	61	26	10	TTSS06014M	3 mm	2,89
6201841	DV50TTGL10080M	10	24	32	80	61	32	10	TTSS08014M	4 mm	2,95
6201842	DV50TTGL12080M	12	24	32	80	61	37	10	TTSS10014M	5 mm	2,93
6201843	DV50TTGL14080M	14	27	34	80	61	37	10	TTSS10014M	5 mm	2,98
6201844	DV50TTGL16080M	16	27	34	80	61	40	10	TTSS12014M	6 mm	2,96
6201845	DV50TTGL18080M	18	33	42	80	61	40	10	TTSS12014M	6 mm	3,10
6201846	DV50TTGL20080M	20	33	42	80	61	42	10	TTSS16014M	8 mm	3,08
6201847	DV50TTGL25100M	25	44	53	100	81	48	10	TTSS16014M	8 mm	3,68

NOTE: For technical information, visit kennametal.com.



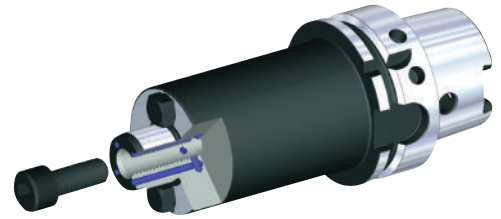
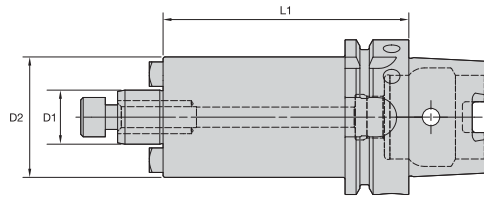
➤ Shell Mill Adaptors with Through Coolant



Through coolant shell mill adaptors are designed to deliver coolant directly to the cutting edge where it is most effective in extending insert life.

Through coolant shell mill adaptors are capable of high-pressure/high-volume coolant supplies, which are perfect for high-performance milling and lowering overall manufacturing costs.

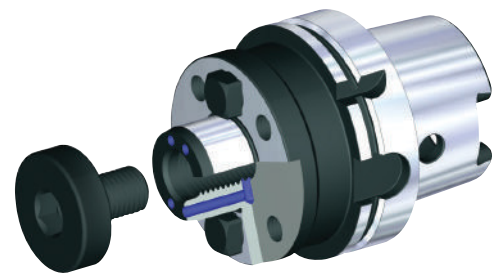
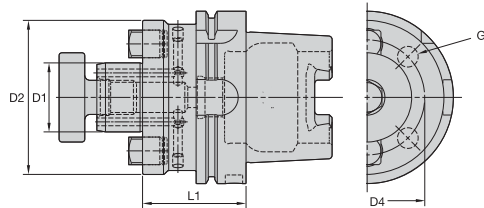
- Broad selection of back end connection types: HSK63A, HSK100A, DV40, DV50, BT30, BT40, and BT50.
- Coolant design for maximum coolant flow channeled directly to the cutting edge or through the centre of the tool.
- Expanded range of smaller mounting diameters defined by "SM2" in the catalogue numbers to support high-performance smaller diameter milling cutters.
- Drive keys upgraded to high-strength material, allowing for high torque capability.
- Supplied with drive keys and locking screws.



■ SMC Cap MM-HSK Form A

order number	catalogue number	D1	D2	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3872681	HSK63ASMC16050M	16	44	50	MS1294	45	KDK16M	6 mm	0,95
3872683	HSK63ASMC22050M	22	49	50	MS1234	60	KDK22M	8 mm	1,05
3872685	HSK63ASMC22100M	22	49	100	MS1234	60	KDK22M	8 mm	1,77
3872686	HSK63ASMC22160M	22	49	160	MS1234	60	KDK22M	8 mm	2,63

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

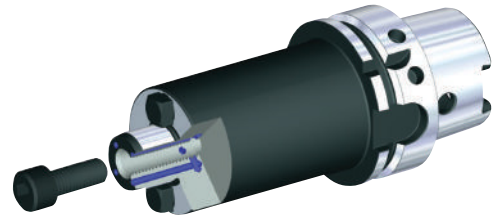
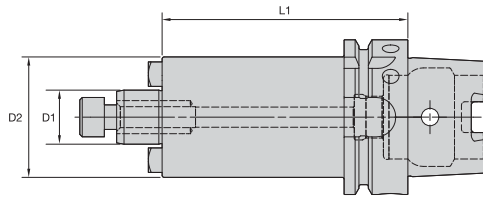


■ SMC Lock MM-HSK Form A

order number	catalogue number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3872687	HSK63ASMC27060M	27	60	—	—	60	KLSS27M	80	KDK27M	10 mm	1,42
3872688	HSK63ASMC27100M	27	60	—	—	100	KLSS27M	80	KDK27M	10 mm	2,11
3872690	HSK63ASMC32060M	32	78	—	—	60	KLSS32M	95	KDK32M	14 mm	1,77
3872691	HSK63ASMC32100M	32	78	—	—	100	KLSS32M	95	KDK32M	14 mm	2,59
3872693	HSK63ASMC40060M	40	89	67	M12X1.75	60	KLSS40M	100	KDK40M	17 mm	2,14

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

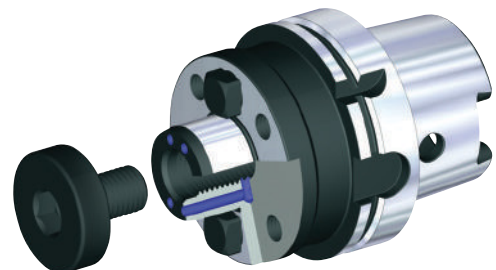
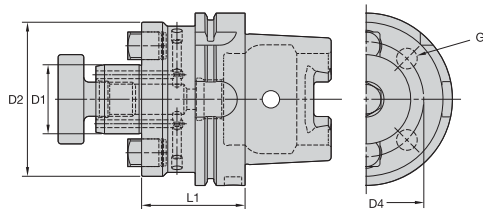




SMC Cap MM-HSK Form A

order number	catalogue number	D1	D2	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3872498	HSK100ASMC16160M	16	44	160	MS1294	45	KDK16M	6 mm	3,48

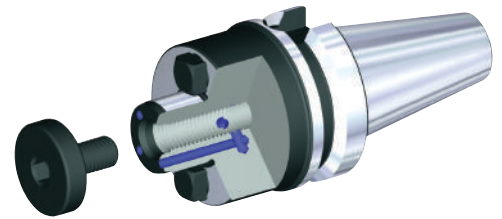
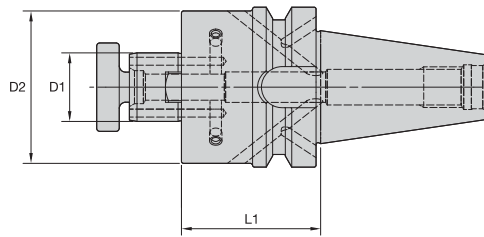
NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



SMC Lock MM-HSK Form A

order number	catalogue number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3872503	HSK100ASMC27100M	27	60	—	—	100	KLSS27M	80	KDK27M	10 mm	3,65
3872504	HSK100ASMC27160M	27	60	—	—	160	KLSS27M	80	KDK27M	10 mm	4,93
3872505	HSK100ASMC32050M	32	78	—	—	50	KLSS32M	95	KDK32M	14 mm	3,00
3872510	HSK100ASMC40160M	40	89	67	M12X1.75	160	KLSS40M	100	KDK40M	17 mm	8,14
3872514	HSK100ASMC60070M	60	129	102	M16X2	70	—	95	KDK60M	—	5,53

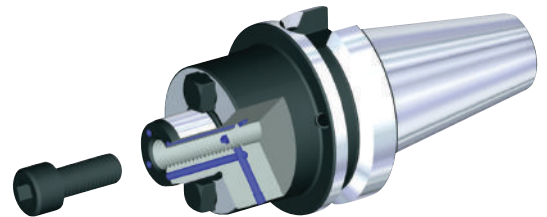
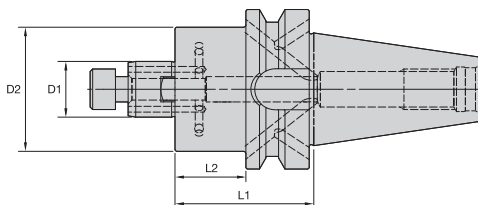
NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



■ SMC Lock MM-BT Form B/AD

order number	catalogue number	D1	D2	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3752244	BT40BSMC27055M	27	60	55	KLSS27M	80	KDK22M	10 mm	1,68
3752245	BT40BSMC27100M	27	60	100	KLSS27M	80	KDK22M	10 mm	2,63

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



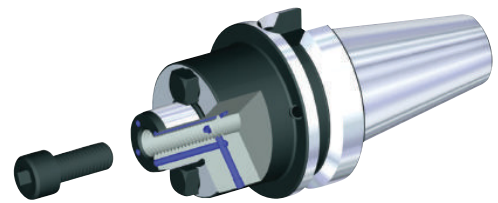
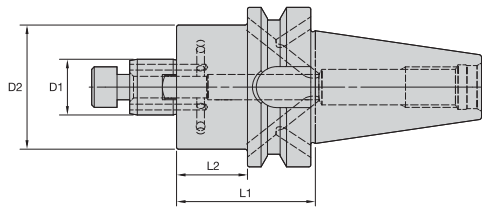
■ SMC Cap MM-BT Form B/AD

order number	catalogue number	D1	D2	L1	L2	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3752232	BT40BSM2C16050M	16	38	50	23	MS1294	45	KDK16M	6 mm	1,16
3752234	BT40BSM2C16075M	16	38	75	48	MS1294	45	KDK16M	6 mm	1,37
3752238	BT40BSM2C22055M	22	42	55	28	MS1234	95	KDK22SM2M	8 mm	1,30
3752241	BT40BSM2C22100M	22	42	100	73	MS1234	95	KDK22SM2M	8 mm	1,75
3752239	BT40BSMC22100M	22	49	100	73	MS1234	95	KDK22M	8 mm	2,03

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



TURNING
FIRST CHOICE



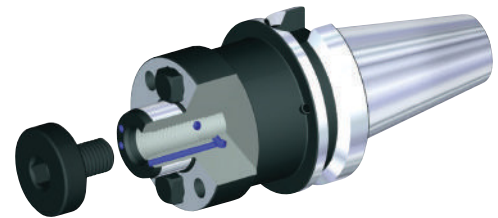
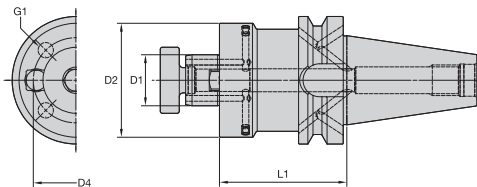
■ SMC Cap MM-BT Form B/AD

order number	catalogue number	D1	D2	L1	L2	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3750034	BT50BSM2C16100M	16	38	100	62	MS1294	45	KDK16M	6 mm	4,04
3750038	BT50BSM2C22045M	22	42	45	7	MS1234	95	KDK22SM2M	8 mm	3,63
3750040	BT50BSM2C22100M	22	42	100	62	MS1234	95	KDK22SM2M	8 mm	4,12

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

MILLING
FIRST CHOICE

HOLEMAKING
FIRST CHOICE

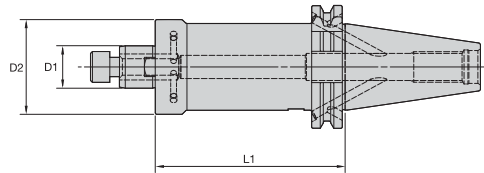


■ SMC Lock MM-BT Form B/AD

order number	catalogue number	D1	D2	D4	G1	L1	lock screw	lock screw maximum torque (Nm)	drive key	kg
3750043	BT50BSMC27045M	27	60	—	—	45	KLSS27M	80	KDK27M	3,76
3750044	BT50BSMC27100M	27	60	—	—	100	KLSS27M	80	KDK27M	4,86
3750046	BT50BSMC32045M	32	78	—	—	45	KLSS32M	95	KDK32M	3,94
3750047	BT50BSMC32100M	32	78	—	—	100	KLSS32M	95	KDK32M	5,87

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

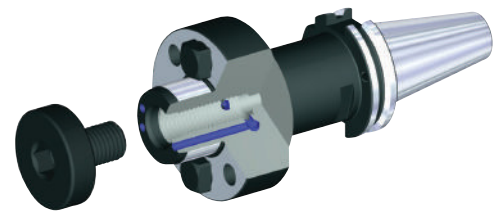
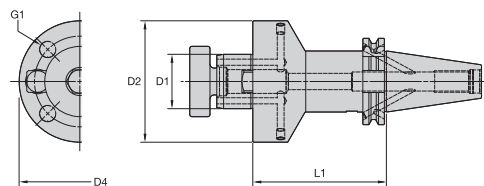
TOOLING SYSTEMS
FIRST CHOICE



■ SMC Cap MM-DV Form B/AD

order number	catalogue number	D1	D2	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3767816	DV40BSM2C16035M	16	38	35	MS1294	45	KDK16M	6 mm	0,96
3767818	DV40BSM2C16100M	16	38	100	MS1294	45	KDK16M	6 mm	1,49
3767820	DV40BSM2C22035M	22	42	35	MS1234	95	KDK22SM2M	8 mm	1,00
3767822	DV40BSM2C22100M	22	42	100	MS1234	95	KDK22SM2M	8 mm	1,65
3767819	DV40BSMC22035M	22	49	35	MS1234	95	KDK22M	8 mm	1,06
3767821	DV40BSMC22100M	22	49	100	MS1234	95	KDK22M	8 mm	1,81

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



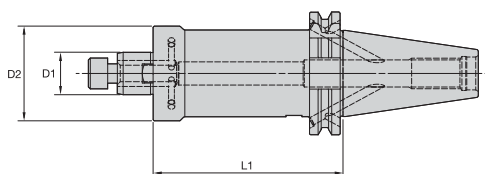
■ SMC Lock MM-DV Form B/AD

order number	catalogue number	D1	D2	L1	G1	D4	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3767833	DV40BSMC27035M	27	50,0	35	—	—	KLSS27M	80	SMK27M	10 mm	1,14
3767835	DV40BSMC32050M	32	78,0	50	—	—	KLSS32M	95	KDK32M	14 mm	1,77

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.



TURNING
FIRST CHOICE

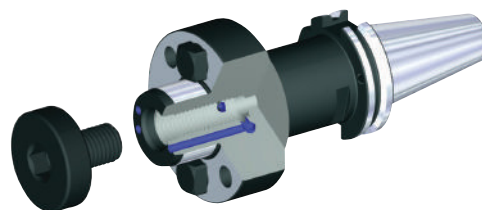
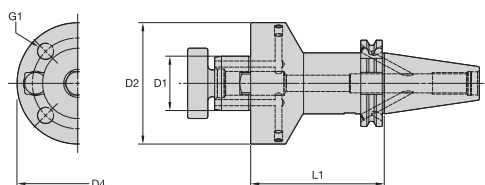


■ SMC Cap MM-DV Form B/AD

order number	catalogue number	D1	D2	L1	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3767846	DV50BSM2C22100M	22	42	100	MS1234	95	KDK22SM2M	8 mm	3,31
3767847	DV50BSM2C22150M	22	49	150	MS1234	95	KDK22M	8 mm	4,26

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

MILLING
FIRST CHOICE



■ SMC Lock MM-DV Form B/AD

order number	catalogue number	D1	D2	L1	G1	D4	lock screw	lock screw maximum torque (Nm)	drive key	wrench size lock screw	kg
3767849	DV50BSMC27035M	27	60,0	35	—	—	KLSS27M	80	KDK27M	10 mm	2,98
3767853	DV50BSMC32100M	32	78,0	100	—	—	KLSS32M	95	KDK32M	14 mm	5,17
3767855	DV50BSMC40050M	40	89,3	50	M12X1.75	66,7	KLSS40M	100	KDK40M	17 mm	4,18
3767856	DV50BSMC40100M	40	89,3	100	M12X1.75	66,7	KLSS40M	100	KDK40M	17 mm	5,76

NOTE: Do not overtighten lock screw.
Supplied with lock screw and drive keys.
Lock screw wrench not included.

HOLEMAKING
FIRST CHOICE

TOOLING SYSTEMS
FIRST CHOICE

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- Milling with indexable inserts
- Fundamentals of materials science and cutting materials
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- Fundamentals of metalworking
- Tapping and tap forming
- Reaming process
- Insert failure analysis

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Participants: max. 15–25
Training location: In local country.
Language: Please contact us for further information in local language

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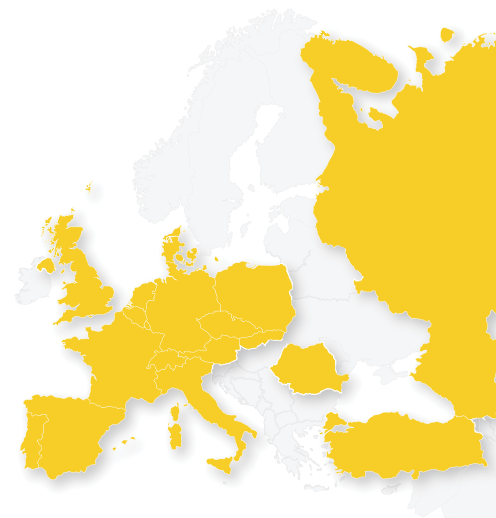


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E-Mail: de-knowledge.center@kennametal.com

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Overview Wrenches

Screwdrivers, Bits, Torque Wrench, and Bit Drivers



NOTE: Kennametal screw drivers, bits, torque wrenches, and bit drivers can be ordered separately, if needed.

drive size												
	1/4" bit 25mm length	order number	1/4" bit extended length	order number	screw driver	order number	Flag-Type Screw Driver	order number	Allen key	order number	T-Handle Screw Driver	order number
hex 1,5	—	—	—	—	170.270	1126021	—	—	170.000	1138273	—	—
hex 2,0	—	—	—	—	170.222	1191006	—	—	170.001	1138280	—	—
hex 2,5	170.179	1138851	—	—	170.224	1138870	—	—	170.002	1138297	—	—
hex 3,0	170.180	1150198	BTQSW3L90	6205876	170.225	1138879	—	—	170.003	1138307	THW3M	2229285
hex 3,5	—	—	—	—	—	—	—	—	—	—	THW35M	1931555
hex 3,5/Torx 15,0	—	—	—	—	—	—	FT1535	1021609	—	—	—	—
hex 4,0/Torx 15,0	—	—	—	—	—	—	FT154	1021611	—	—	—	—
hex 4,0	170.181	1138857	—	—	170.226	1191007	—	—	170.004	1138315	THW4M	1931556
hex 5,0	—	—	—	—	—	—	—	—	170.005	1138323	170.135	1138748
hex 6,0	—	—	—	—	—	—	—	—	170.006	1138331	170.136	1138755
hex 8,0	—	—	—	—	170.229	1191010	—	—	170.008	1135984	—	—
hex 9,0	—	—	—	—	—	—	—	—	170.009	2272577	—	—
hex 10,0	—	—	—	—	—	—	—	—	—	—	—	—
hex 12,0	—	—	—	—	—	—	—	—	—	—	—	—
hex 5/64	—	—	—	—	—	—	—	—	—	—	KW078	1022575
hex 3/32	—	—	—	—	—	—	—	—	—	—	KW093	1022581
hex 7/64	—	—	—	—	—	—	—	—	—	—	KW109	1022537
hex 1/8	—	—	—	—	—	—	—	—	—	—	—	—
hex 5/32	—	—	—	—	—	—	—	—	—	—	KW156	1022565
hex 3/16	—	—	—	—	—	—	—	—	—	—	KW187	1022579
hex 7/32	—	—	—	—	—	—	—	—	—	—	—	—
Torx 5	—	—	—	—	—	—	FT5	1021589	KT5	1099677	—	—
Torx 6	BT6	1962981	—	—	DT6	1022463	FT6	1126361	KT6	1022691	—	—
Torx 7	BT7	1963853	—	—	DT7	1022485	FT7	1021591	KT7	1022693	—	—
Torx 8	BT8	1963855	—	—	DT8	1022487	FT8	1021593	KT8	1022695	—	—
Torx 9	BT9	1963854	—	—	DT9	1022489	FT9	1020533	KT9	1022697	—	—
Torx 10	BT10	1963856	—	—	DT10	1022491	FT10	1099651	KT10	1022699	—	—
Torx 10/15	—	—	—	—	—	—	FT1015	1099652	—	—	—	—
Torx 15	170.182	2261642	170.177	1138829	DT15	1022493	FT15	1021605	KT15	1022701	TT15	1022315
Torx 15	—	—	BTQT15L90	6205877	—	—	—	—	—	—	—	—
Torx 20	170.176	1138822	BTQT20L90	6205878	—	—	FT20	1021607	KT20	1022703	TT20	1022317
Torx 25	—	—	170.259	1994579	—	—	—	—	KT25	1022725	TT25	1022519
Torx 25	—	—	BTQT25L90	6205879	—	—	—	—	—	—	—	—
Torx 27	170.256	1984243	170.257	1985840	—	—	—	—	KT27	1022727	—	—
Torx 30	—	—	—	—	—	—	—	—	KT30	1099676	TT30	1022521
Torx 40	—	—	—	—	—	—	—	—	—	—	—	—
Torx 45	—	—	—	—	—	—	—	—	KT45	1018227	—	—
Torx Plus 7	—	—	—	—	DT7IP	3644073	—	—	—	—	—	—
Torx Plus 8	—	—	—	—	DT8IP	2388424	—	—	K8IP	2388488	TTP8	1931553
Torx Plus 9	—	—	—	—	DT9IP	2269913	—	—	K9IP	1985786	TTP9	1985792
Torx Plus 10	—	—	—	—	DT10IP	2388425	—	—	K10IP	2388489	TTP10	2504383
Torx Plus 15	—	—	BTQTP15L90	6205880	DT15IP	2269914	—	—	K15IP	1867353	TTP15	1931554
Torx Plus 20	—	—	BTQTP20L90	6205891	DT20IP	2388427	—	—	K20IP	2388491	TTP20	1994291
Torx Plus 25	BT25IP	2244316	BTQTP25L90	6205892	DT25IP	2269915	—	—	K25IP	2050113	TTP25	4064258
Torx Plus 27	BT27IP	2244317	BTE27IP	2244319	—	—	—	—	K27IP	1985787	TTP27	1985793
Torx Plus 30	—	—	—	—	DT30IP	2388426	—	—	K30IP	2388490	—	—



■ Torque-Controlled Wrenches • 0,6–5,4 Nm (5.3–47.8 in. lbs.)

Order Number	Catalogue Number	Drive Size	Description
3641463	DTQ0615	—	Torque Control Wrench Handle 0.6–1.5 Nm
3641464	DTQ1530	—	Torque Control Wrench Handle 1.5–3.0 Nm
3641465	DTQ3054	—	Torque Control Wrench Handle 3.0–5.4 Nm
3641466	BTQT6	T6	Blade for screw driver
3641467	BTQT7	T7	Blade for screw driver
3641468	BTQT8	T8	Blade for screw driver
3641469	BTQT9	T9	Blade for screw driver
3641470	BTQT10	T10	Blade for screw driver
3641471	BTQT15	T15	Blade for screw driver
3641472	BTQT20	T20	Blade for screw driver
3641473	BTQT25	T25	Blade for screw driver
3641474	BTQ6IP	Torx Plus 6	Blade for screw driver
3641475	BTQ7IP	Torx Plus 7	Blade for screw driver
3641476	BTQ8IP	Torx Plus 8	Blade for screw driver
3641477	BTQ9IP	Torx Plus 9	Blade for screw driver
3641478	BTQ10IP	Torx Plus 10	Blade for screw driver
3641479	BTQ15IP	Torx Plus 15	Blade for screw driver
3641481	BTQW3M	hex 3mm	Blade for screw driver
3641480	DTQCAP	—	Cover Cap



■ Torque-Controlled Wrenches • 5–14 Nm (3.7–10.3 in. lbs.)

Order Number	Catalogue Number	Drive Size	Description
6197561	DTQ50140	hex 1/4"	T-handle torque wrench, adjustable 5–14 Nm
6205876	BTQSW3L90	hex 3mm	Bit Hex 3mm L = 90mm
6205877	BTQT15L90	T15	Bit Torx 15 L = 90mm
6205878	BTQT20L90	T20	Bit Torx 20 L = 90mm
6205879	BTQT25L90	T25	Bit Torx 25 L = 90mm
6205880	BTQTP15L90	Torx Plus 15	Bit Torx Plus 15 L = 90mm
6205891	BTQTP20L90	Torx Plus 20	Bit Torx Plus 20 L = 90mm
6205892	BTQTP25L90	Torx Plus 25	Bit Torx Plus 25 L = 90mm



■ Bit Adaptor

Order Number	Catalogue Number	Drive Size	Description
1963869	DRIVER	hex 1/4"	Bit Adaptor suitable for standard and extended length 1/4" drive bits

Turning Icons

Through Coolant	Turning	Profiling	Facing	Chamfering
Back Boring	Grooving	Cut-Off	I.D. Turning	I.D. Chamfering
I.D. Facing	I.D. Grooving	I.D. Face Grooving	Deep Grooving	

Indexable Milling Icons

Counterboring	Spiral Circular	Face Milling	Helical Milling	Plunge Milling
Plunge Milling: Ball Nose	Ramping: Blank	Slotting: Square End	Side Milling/ Shoulder Milling: Square End	Side Milling/ Shoulder Milling: Eased Chamfer
Slotting: Shoulder	3D Profiling with Square End Mill	Pocketing	Shank: Cylindrical Plain	Shank: Cylindrical Weldon®
Shank: Cylindrical Weldon 2 Flat	Shank: Screw-On	Shell Mill Shank	Milling: Through Coolant	

Solid End Milling Icons

Plunge Milling	Plunge Milling: Ball Nose	Ramping: Blank	Ramping: Up to 3°	Slotting: Ball Nose
Slotting: Ball Nose with AP Dimensions	Slotting: Square End	Slotting: Square End with AP Dimension	Trochoidal Milling	Side Milling/Shoulder Milling: Ball Nose
Side Milling/Shoulder Milling: Ball Nose with AE/AP Dimensions	Side Milling/Shoulder Milling: Square End	Side Milling/Shoulder Milling: Square End with AE/AP Dimensions	3D Profiling	Corner Style: Ball Nose
Corner Style: Corner Chamfer	Corner Style: Corner Radius	Corner Style: Square End	Shank: Cylindrical Plain	Shank: Cylindrical Weldon®
Shank: Safe-Lock™	Duo-Lock™ Connection	Helix Angle: 20°	Helix Angle: 30°	Helix Angle: 38°
Helix Angle: 43°	Helix Angle: 45°	Helix Angle: 37°/39°	Balance (G 2.5/25,000)	DIN Number 6527
DIN Number 6528	Through Coolant	Tool Dimensions: Flute Configuration: X (Variable)	Tool Dimensions: Flute Configuration: 2	Tool Dimensions: Flute Configuration: 3
Tool Dimensions: Flute Configuration: 4	Tool Dimensions: Flute Configuration: 5	Tool Dimensions: Flute Configuration: 6		

Holemaking Icons

Drilling	Drilling: Inclined Entry	Drilling: Inclined Exit	Drilling: Exit Offset	Drilling: Stacked Plates
Drilling: Convex	Drilling: Blind Hole	Drilling: Chain	Drilling: Cross Hole	Drilling: Half Cylinder
Drilling: Corner Drilling 45°	Drilling Depth: 3 x D	Drilling Depth: 5 x D	Drilling Depth: 7 x D	Drilling Depth: 8 x D
Drilling Depth: 10 x D	Shank: Cylindrical Plain ≤h6	Shank: Cylindrical Whistle Notch 2°	Shank: Cylindrical Whistle Notch with Drive and Flange	Helix Angle: 30°
DIN Number 6537	DIN Number 6535	Drilling: No Coolant	Through Coolant: Radial: Drilling	Through Coolant: Radial: Indexable Drilling
Flood Coolant: Drilling	Through Coolant: MQL (Minimum Quantity Lubricant): Drilling	Tool Dimensions: 2 Flute/2 Margin/ Coolant	Tool Dimensions: 2 Flute/2 Margin/ No Coolant	Tool Dimensions: 2 Flute/4 Margin/ Coolant

Tapping Icons

Tapping: Through Hole	Tapping: Blind Hole	Threading: Blind Hole	HSS-E: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness	HSS-E-PM: High-Speed Steel with Cobalt Alloy for Materials with Higher Hardness (PM = Powder Metal Steel)
Square Shank	Chamfer Form C (2-3)	Chamfer Form D (3.5-5)	Plug Chamfer Form B (3-5)	Tapping Helix Angle: 0°
Tapping Helix Angle: L15°	Tapping Helix Angle: 45°	Multipurpose Taps: Spiral Point	Tension/ Compression	DIN Number 371
DIN Number 374	DIN Number 376	Flood Coolant: Tapping	Through Coolant: Axial: Tapping	Manufacturer's Specs: ISO 2
Manufacturer's Specs: ISO 3	Class of Fit: 6H	Class of Fit: 6HX	Class of Fit: 6G	ISO Metric Coarse Thread
ISO Metric Fine Thread				

Tooling Systems Icons

Shank: Cylindrical Plain ≤h6	Shank: Cylindrical Weldon® ≤h6	Shank: Cylindrical Whistle Notch ≤h6	Shank: SK BT JIS B 6339	Shank: SK DV DIN 69871
Shank — SK BT Taper Face Contact	Shank — HSK DIN 69893 Form A	Shank — HSK DIN 69893 Form A	Shank: Shell Mill	Shank: Safe-Lock™ ≤h6
Axial Adjustments: End	Balanced-by-Design	Balance G 2.5/25,000	Balance — G 2.5@ 25,000 min ⁻¹	DIN Number 69893
Accuracy — 3µm or Less	Drilling — Through Coolant	Milling — Through Coolant	Through Coolant: 100 bar	Through Coolant: 1500 psi
Through Coolant: Through Adaptor Face				





P	Steel
M	Stainless Steel
K	Cast Iron

N	Non-Ferrous
S	High-Temp Alloys

H	Hardened Materials
C	CFRP Materials

material group	description	content	tensile strength RM (MPa)*	hardness (HB)	hardness (HRC)	material number
P0	Low-Carbon Steels, Long Chipping	C <0,25%	<530	<125	-	-
P1	Low-Carbon Steels, Short Chipping, Free Machining	C <0,25%	<530	<125	-	C15, Ck22, ST37-2, S235JR, 9SMnPb28, GS38
P2	Medium- and High-Carbon Steels	C >0,25%	>530	<220	<25	ST52, S355JR, C35, GS60, Cf53
P3	Alloy Steels and Tool Steels	C >0,25%	600–850	<330	<35	16MnCr5, Ck45, 21CrMoV5-7, 38SMn28
P4	Alloy Steels and Tool Steels	C >0,25%	850–1400	340–450	35–48	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P5	Ferritic, Martensitic, and PH Stainless Steels	-	600–900	<330	<35	100Cr6, 30CrNiMo8, 42CrMo4, C70W2, S6525, X120Mn12
P6	High-Strength Ferritic, Martensitic, and PH Stainless Steels	-	900–1350	350–450	35–48	X102CrMo17, G-X120Cr29
M1	Austenitic Stainless Steel	-	<600	130–200	-	X5CrNi 18 10, X2CrNiMo 17 13 2, G-X25CrNiSi18 9, X15CrNiSi 20 12
M2	High-Strength Austenitic Stainless and Cast Stainless Steels	-	600–800	150–230	<25	X2CrNiMo 13 4, X5NiCr 32 21, X5CrNiNb 18 10, G-X15CrNi 25-20
M3	Duplex Stainless Steel	-	<800	135–275	<30	X8CrNiMo27 5, X2CrNiMoN22 5 3, X20CrNiSi25 4, G-X40CrNiSi27 4
K1	Grey Cast Iron	-	125–500	120–290	<32	GG15, GG25, GG30, GG40, GTW40
K2	Low- and Medium-Strength Ductile Irons (Nodular Irons) and Compacted Graphite Irons (CGI)	-	<600	130–260	<28	GGG40, GTS35
K3	High-Strength Ductile Irons and Austempered Ductile Iron (ADI)	-	>600	180–350	<43	GGG60, GTW55, GTS65
N1	Wrought Aluminium	-	-	-	-	AlMg1, Al99.5, AlCuMg1, AlCuBiPb, AlMgSi1, ALMgSiPb
N2	Low-Silicon Aluminium Alloys and Magnesium Alloys	Si <12,2%	-	-	-	GAISiCu4, GDAISI10Mg
N3	High-Silicon Aluminium Alloys and Magnesium Alloys	Si >12,2%	-	-	-	G-ALSi12, G-AISI17Cu4, G-AISI21CuNiMg
N4	Copper-, Brass-, Zinc-Based on Machinability Index Range of 70–100	-	-	-	-	CuZn40, Ms60, G-CuSn5ZnPb, CuZn37, CuSi3Mn
N5	Nylon, Plastics, Rubbers, Phenolics, Resins, Fibreglass	-	-	-	-	Lexan®, Hostalen™, Polystyrol, Makrolon®
N6	Carbon, Graphite Composites, CFRP	-	-	-	-	CFK, GFK
N7	Metal Matrix Composites (MMC)	-	-	-	-	-
S1	Iron-Based, Heat-Resistant Alloys	-	500–1200	160–260	25–48	X1NiCrMoCu32 28 7, X12NiCrSi36 16, X5NiCrAlTi31 20, X40CoCrNi20 20
S2	Cobalt-Based, Heat-Resistant Alloys	-	1000–1450	250–450	25–48	Haynes® 188, Stellite® 6,21,31
S3	Nickel-Based, Heat-Resistant Alloys	-	600–1700	160–450	<48	INCONEL® 690, INCONEL 625, Hastelloy®, NIMONIC® 75
S4	Titanium and Titanium Alloys	-	900–1600	300–400	33–48	Ti1, TiAl5Sn2, TiAl6V4, TiAl4Mo4Sn2
H1	Hardened Materials	-	-	-	44–48	GX260NiCr42, GX330NiCr42, GX300CrNiSi952, GX300CrMo153, Hardox® 400
H2	Hardened Materials	-	-	-	48–55	-
H3	Hardened Materials	-	-	-	56–60	-
H4	Hardened Materials	-	-	-	>60	-
C1	CFRP, CFRP/CFRP	-	-	-	-	-
C2	CFRP/Non-Ferrous	-	-	-	-	-
C3	CFRP/High Temp	-	-	-	-	-
C4	CFRP/Stainless Steel	-	-	-	-	-
C5	CFRP/Non-Ferrous/High-Temp	-	-	-	-	-

METALCUTTING SAFETY

IMPORTANT SAFETY INSTRUCTIONS

Read before using the tools in this catalogue!

Projectile and Fragmentation Hazards:

Modern metalcutting operations involve high spindle and cutter speeds and high temperatures and cutting forces. Hot metal chips may fly off the workpiece during metalcutting. Although cutting tools are designed and manufactured to withstand high cutting forces and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metalcutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards:

Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing this dust or mist — especially over an extended period — can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, mist, or sludge from grinding.
- Avoid skin contact with dust or mist.

For more information, read the applicable Material Safety Data Sheet provided by Kennametal and consult General Industry Safety and Health Regulations, Part 1910, Title 29 of the Code of Federal Regulations.

These safety instructions are general guidelines. Many variables affect machining operations. It is impossible to cover every specific situation. The technical information included in this catalogue and recommendations on machining practices may not apply to your particular operation. For more information, consult the Kennametal Metalcutting Safety booklet, available free from Kennametal at 724 539 5747 or fax 724 539 5439. For specific product safety and environmental questions, contact our Corporate Environmental Health and Safety Office at 724 539 5066 or fax 724 539 5372.

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